Tuff Sport® & ColorSmart® Indoor LED Scoreboards

Installation Manual

DD2481645 ***Rev 2 – 26 July 2013***

DAKTRONICS

Models									
	BB-2101		BB-2122	*	BB-3101		H-2103		SD-2106
	BB-2103		BB-2123	*	BB-3103		H-2104	*	SD-3101
	BB-2105		BB-2125	*	BB-3105		H-2106	*	SD-3102
	BB-2107		BB-2130	*	BB-3107		H-2108	*	SD-3103
	BB-2109		BB-2131	*	BB-3114		H-2111		TI-2030
	BB-2111		BB-2132	*	BB-3115		H-2114		TI-2101
	BB-2114		BB-2142	*	BB-3121		H-2115		TI-2102
	BB-2115		BB-2143	*	BB-3123		PN-2101		TI-2200
	BB-2116		BB-2144	*	BB-3125		SD-2101		VB-2101
	BB-2117		BB-2152	*	BB-3142		SD-2102		
	BB-2119		BB-2153		H-2101		SD-2103		
	BB-2121		BB-2155		H-2102		SD-2104		

* ColorSmart or compatible model

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DAKTRONICS

DD2481645
Product 1749 & 1763
Rev 2 – 26 July 2013

DAKTRONICS, INC.

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Section 1: Introduction

This manual explains the installation of Daktronics Tuff Sport® and ColorSmart® Indoor LED Scoreboards, Game/Shot Clocks, and Statistics Panels. For additional information regarding the safety, installation, operation, or service of these displays, refer to the telephone numbers listed in **Section 4**. This manual is not specific to a particular installation. Project-specific information takes precedence over any other general information found in this manual.

IMPORTANT SAFEGUARDS:

- Please read and understand all instructions before beginning the installation process.
- Do not drop control equipment or allow it to get wet.
- Do not disassemble control equipment or electronic controls of the display; failure to follow this safeguard will make the warranty null and void.
- Disconnect display power when not in use or when servicing.
- Disconnect display power before servicing power supplies to avoid electrical shock. Power supplies run on high voltage and may cause physical injury if touched while powered.
- Do not modify the scoreboard structure or attach any panels or coverings to the scoreboard without the express written consent of Daktronics, Inc.

1.1 Scoreboard Controllers

Daktronics Tuff Sport scoreboards are designed for use with the All Sport® 1600 and 5000 series control consoles, and certain models may also be controlled with the RC-100 handheld controller. All controller use keyboard overlays (sport inserts) to control numerous sports and scoreboard models. Refer to the following manuals for operating instructions:

- **All Sport 1600 Series Control Console Operation Manual (ED-12462)**
- **All Sport 5000 Series Control Console Operation Manual (ED-11976)**
- **Remote Control System RC-100 All Sport Operation Manual (ED-15133)**

Daktronics ColorSmart scoreboards are only compatible with the All Sport 5500 series control console. Refer to the manual below:

- **All Sport 5500 Series Control Console Operation Manual (ED-16809)**

Sport Codes

Below is a table of common sport codes. Note that many scoreboards are capable of scoring multiple sports. Refer to the Operation Manuals for a complete listing of sport codes.

Sport	Common Code(s)		
	All Sport 5000/5500	***All Sport 1600***	***RC-100***
Basketball	1101 (PLAYER-FOUL) 1105 (PLYR/FL/PTS)	21	10
Hockey	4401 (without SOG) 4402 (with SOG)	01	01
Volleyball	2101 (MATCH/GAME) 2105 (PLYR/FL/PTS)	01	01
Wrestling	3101	01	01

1.2 Troubleshooting

For an extensive troubleshooting guide and instructions on how to replace scoreboard components, refer to the following manuals:

- **Tuff Sport Indoor LED Scoreboards Service Manual (DD2481648)**
- **ColorSmart Indoor LED Scoreboards Service Manual (DD2507404)**

The service and controller manuals are available online at www.daktronics.com/manuals.

1.3 Specifications Label

Power specifications as well as serial and model number information can be found on an ID label on the display, similar to the one shown in **Figure 1**.

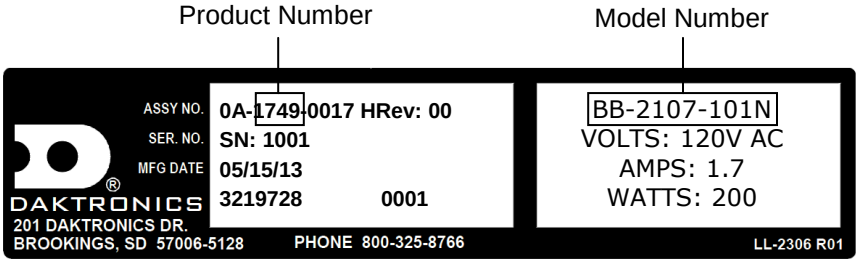


Figure 1: *Specifications Label*

Please have the assembly number, model number, and the date manufactured on hand when calling Daktronics customer service to ensure the request is serviced as quickly as possible. Knowing the facility name and/or job number will also be helpful. Note that the Product Number(s) are sometimes used to distinguish different generations of the scoreboards having the same model number.

1.4 Resources

Figure 2 illustrates a Daktronics drawing label. The drawing number is located in the lower-right corner of a drawing. This manual refers to drawings by listing the last set of digits and the letter preceding them. In the example, the drawing would be referred to as **Drawing C-325405**.

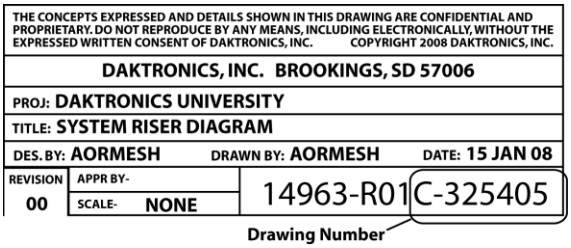

THE CONCEPTS EXPRESSED AND DETAILS SHOWN IN THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS, INCLUDING ELECTRONICALLY, WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2008 DAKTRONICS, INC.
DAKTRONICS, INC. BROOKINGS, SD 57006
PROJ: DAKTRONICS UNIVERSITY
TITLE: SYSTEM RISER DIAGRAM
DES. BY: AORMESH
DRAWN BY: AORMESH
DATE: 15 JAN 08
REVISION
00
APPR BY-
SCALE- NONE
14963-R01C-325405
Drawing Number

Figure 2: *Daktronics Drawing Label*

Daktronics identifies manuals by the DD or ED number located on the cover page of each manual. For example, this manual would be referred to as **DD2481645**.

1.5 Product Safety Approval

Daktronics indoor scoreboards are ETL-listed, tested to CSA standards and CE-labeled for indoor use. Contact Daktronics with any questions regarding testing procedures.

Section 2: Mechanical Installation

Mechanical installation consists of lifting and permanently mounting the scoreboard, statistics panels, and game/shot clocks. The product specification sheets listed in **Appendix A** include installation specification drawings that show the recommended number and spacing of wall anchors for specific scoreboard models.

Be sure that the installation complies with local building codes.

> **Note:** Daktronics does not assume any liability for any installation derived from the information provided in this manual or installations designed and installed by others.

2.1 Lifting the Scoreboard

Most Daktronics indoor scoreboards and statistics panels are shipped equipped with at least one eyebolt for lifting, as well as pre-drilled holes along the top and bottom of each cabinet for wall attachment. Eyebolts are located along the top of the cabinet for each scoreboard or scoreboard section. (The smaller game/shot clocks do not require eyebolts and are not equipped with them.) Daktronics indoor scoreboards use $^{3}/_{8}$" eyebolts.

Daktronics strongly recommends using a spreader bar, or lifting bar, to lift the display. Spreader bars ensure the force on the eyebolts remains straight up, minimizing lifting stress.

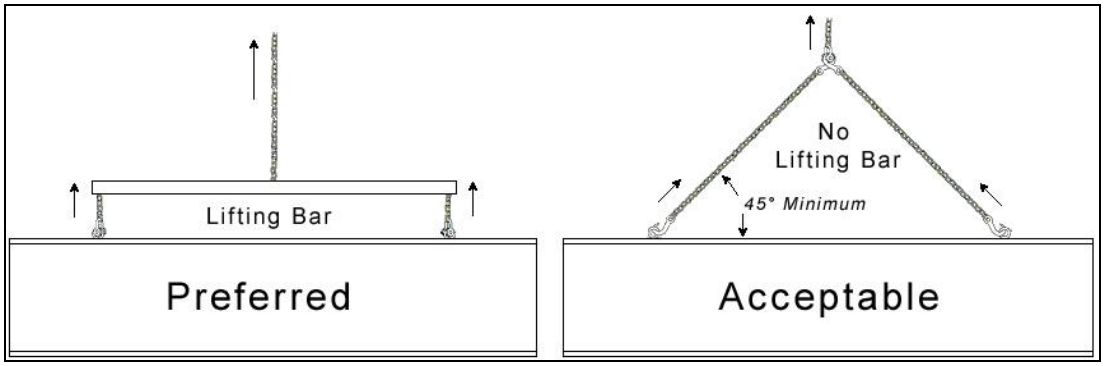


Figure 3: *Lifting Methods*

Figure 3 illustrates the preferred scoreboard lifting method on the left and an acceptable alternative lifting method on the right. When lifting the display:

- Use a spreader bar if possible.
- Use every lifting point provided.

Cables and chains attached to the eyebolts and directly to a center lifting point, as shown in the right-hand example in **Figure 3**, can create a dangerous lateral force on the eyebolts and may cause the eyebolts to fail. The smaller the angle between the cable and the top of the display, the lighter the sign must be to safely lift it. If this method must be used, ensure a minimum angle between the chain and scoreboard of at least 45°.

Do NOT attempt to lift the display if the angle is less than 45°.

Exceeding load angles or weight limits could cause the bolts in the scoreboard cabinet to buckle, resulting in serious damage to the scoreboard or injury to personnel. Also, loads should be applied directly in the plane of the eyebolt as shown in **Figure 4**.

> **Note:** Daktronics assumes no liability for damages resulting from incorrect setup or lifting methods. Eyebolts are intended for lifting only. Do not attempt to permanently support the display by the eyebolts without the suspension mounting kit.

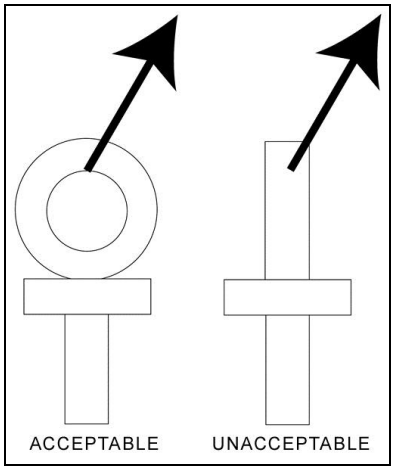


Figure 4: *Eyebolt Plane Load*

Small Daktronics scoreboards are not equipped with eyebolts, and instead use two lifting straps that encircle the scoreboard. It is recommended to use a spreader bar with the straps.

2.2 Scoreboard & Statistics Display Mounting

1. Use the eyebolt(s) at the top of the scoreboard frame to lift the display into position for mounting.

   > **Note:** For basketball statistic displays or hockey scoring modules, verify the correct HOME or GUEST display by looking at the label on top of the cabinet to determine whether it should be mounted to the left or right of the scoreboard.

2. Secure the display to the wall by attaching mounting hardware through all holes on the top and bottom rear flanges of the display to a pre-drilled hole in the wall (**Figure 5**).

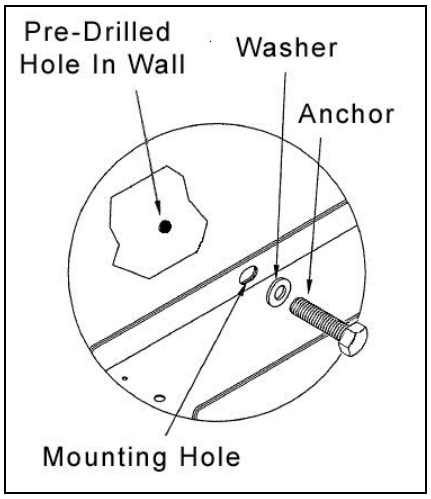


Figure 5: *Wall Mounting*

For mounting locations, weights and hardware suggestions, refer to the model-specific mechanical specification drawings attached to the product specification sheets listed in **Appendix A**.

Due to the variety of wall materials used in sports facilities, Daktronics cannot anticipate a user's individual installation needs or provide mounting hardware suitable for every installation. Choose a method of installation that will safely support the weight of the display.

Hockey Scoring Modules

Hockey scoring modules are small sections that show additional game information, such as penalty time or shots on goal. Modules can be connected to the main scoreboard as well as other modules to form many unique arrangements. For more information on modular scoreboard configurations, refer to **Drawing A-169166** in **Appendix A**.

> **Note:** If scoreboards and modules are to be mounted in a vertical arrangement, the signal cables for the bottom displays must be installed and connected before the upper scoreboard sections are positioned and secured. Refer to **Section 3.5**.

Corner Mounting

Certain indoor scoreboard models may be mounted in a corner, rather than flat against the wall, using a special mounting bracket kit. For more information on the corner mounting option, refer to **Drawing A-150831** in **Appendix B**.

Suspension Mounting

Rather than being mounted to the wall, indoor scoreboards may be suspended using a special lift eye mounting kit. Refer to **Drawing A-1130959** in **Appendix B** for more information. Always contact Daktronics about any installation that involves permanently suspending the scoreboard.

2.3 Shot Clock Mounting

Single-sided shot clocks may be mounted to a wall in the same manner as a scoreboard or statistics display. Multi-sided shot clocks are frequently mounted to vertical backstop supports. Refer to **Drawing A-91230** in **Appendix B** for shot clock mounting information.

> **Note:** Daktronics does not supply the hardware or brackets to mount shot clocks to backstops and is not responsible for the integrity of suitability of mounting systems manufactured and installed by others.

2.4 Ad Panel Mounting

Ad panels may be mounted to a wall in the same manner as a scoreboard or statistics display. If an ad panel is to be mounted directly to the top or bottom of a scoreboard cabinet, refer to **Drawing A-156134** in **Appendix B**.

2.5 Scoreboard Protective Devices

Daktronics indoor displays have been designed so that indoor sports balls impact will not damage the LEDs or display cabinet, reducing the need for protective devices. Some users, however, may still wish to have additional protection from other projectiles, and in these cases, Daktronics provides optional protective devices. Refer to the **Protective Screen Installation Instructions (ED-5423)**, available online at www.daktronics.com/manuals for more information about installing protective devices.

> **Note:** Scoreboard protection devices not provided by Daktronics must be approved by Daktronics prior to installation. Failure to follow this approval procedure will void the scoreboard warranty.

Section 3: Electrical Installation

CAUTION: Only qualified individuals should access the electrical components of the display and its associated equipment. It is the responsibility of the electrical contractor to ensure that all electrical work meets or exceeds local and national codes.

Daktronics engineering staff must approve all changes or the warranty will be void.

3.1 Installation Overview

The diagram shown in **Figure 6** illustrates a typical wired setup between a scoreboard and the control system. Daktronics part numbers are shown in parentheses. **Drawings A-124686, A-124688** , and **A-124689** in **Appendix B** also show power and signal layouts.

Note: Control signal cable and some junction boxes are not provided as part of this system and can be purchased locally or from Daktronics.

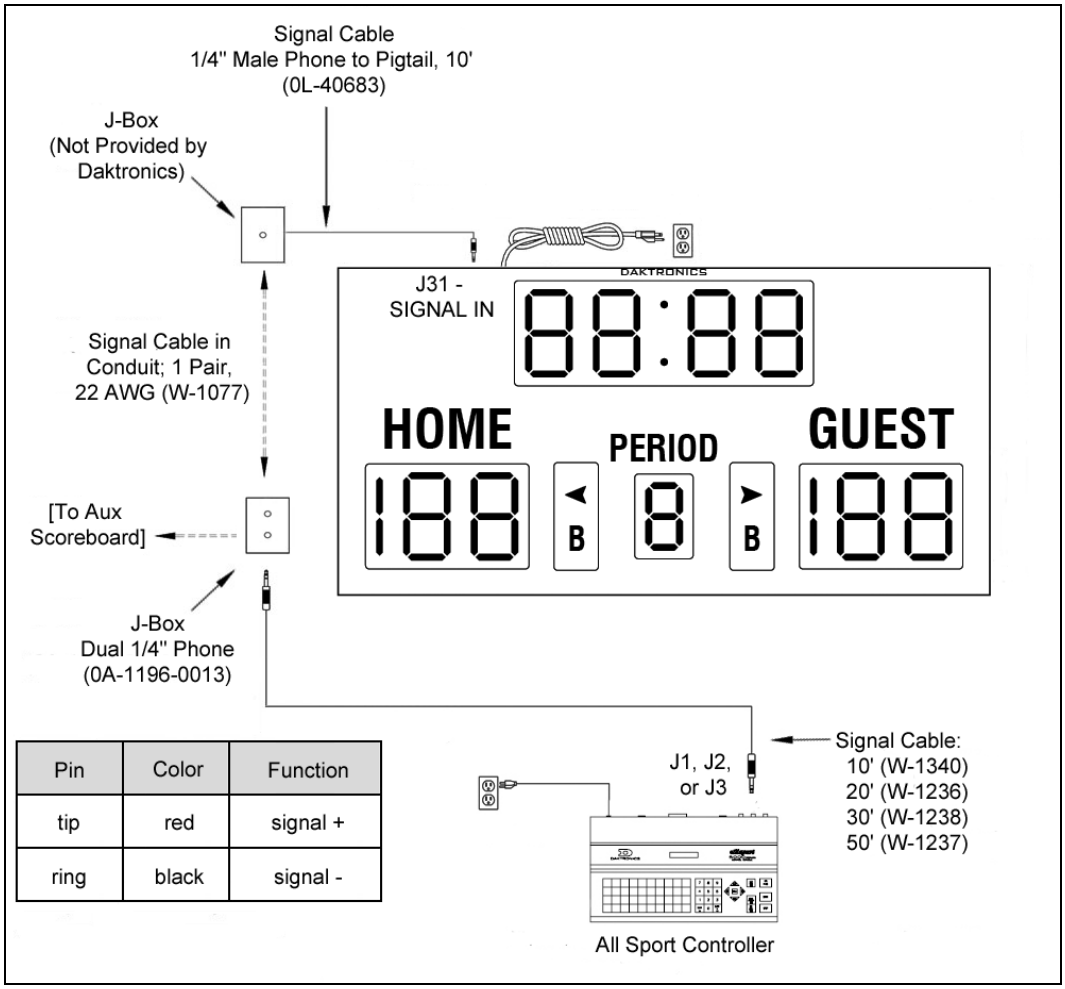


Figure 6: *Wired Installation*

The diagram shown in **Figure 7** illustrates a typical wireless setup between a scoreboard and the control system. Refer to **Section 5.2** for more information about the wireless radio option.

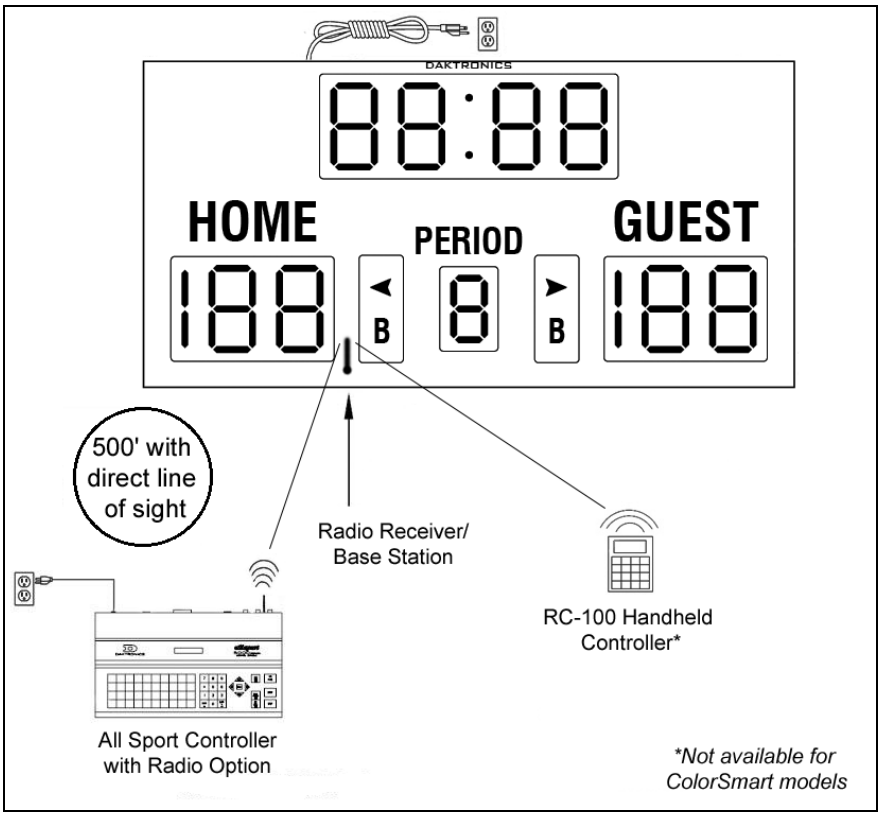


Figure 7: *Wireless Installation*

3.2 Power

Each scoreboard features a 120 VAC power cord with a three-prong plug. Install a grounded receptacle near the equipment so that the power cord can easily reach it. The control console requires a 120/240 VAC receptacle and uses less than 1 A of power.

> **Note:** Certain scoring modules require connections to other scoreboards for power and signal. Refer to **Section 3.4** and **Section 3.5** for more information.

Displays operating on 240 VAC are also available (excluding ColorSmart models), and they are shipped equipped with a universal power plug.

Grounding

Connect the scoreboard to earth ground. Proper grounding assures reliable equipment operation and protects the equipment against damaging electrical disturbances and lightning. Daktronics recommends a resistance-to-ground of 10 ohms or less. The electrical contractor performing the electrical installation can verify ground resistance. Daktronics Sales and Service personnel can also provide this service. The grounding connection on the power cord's three-prong plug connects to the shell of the scoreboard.

> **Note:** The customer must properly ground the outlet according to local and national codes. Failure to ground the outlet voids the warranty for the scoreboard.

3.3 Power-On Self-Test (POST)

The scoreboard performs a self-test each time that power is turned on and the control console is powered off or not attached to the scoreboard. If the control console is attached and powered on, the self-test does not run, and data from the control console is displayed on the scoreboard after a brief period of time. Each scoreboard self-test pattern will vary depending on the scoreboard model, the number of drivers and types of digits. **Figure 8** shows an example of the LED bar test pattern that each digit performs.

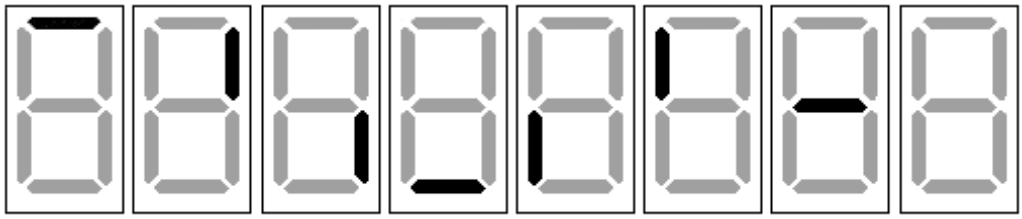


Figure 8: *Digit Segment POST*

Radio Settings

If a radio receiver is installed (see **Section 5.2**), the radio Broadcast settings ("b1") and Channel settings ("C1") will be displayed in the clock digits during the POST. These values must match the settings in the control console (refer to **Figure 10** and the manual listed in **Section 1.1**).

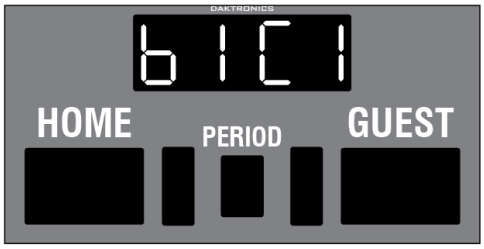


Figure 9: *Radio Settings in Clock Digits*

Note: Scoreboards using the RC-100 controller will only display the channel settings.

Figure 10: *Radio Settings (Console)*

3.4 Scoreboard Signal Connection

Wired signal installation requires routing control cable from the scoreboard control console to a signal junction box (J-box) near the display. Refer to **Figure 6** for typical signal layout. Refer also to **Drawings A-28124** and **A-125316** in **Appendix B** for signal wire connection.

1. At a minimum, use a paired, 22 AWG shielded cable (Daktronics part # W-1077) and connect the cable to a dual $^1/_4$" J-box at the control console end.

   Note: Using a dual J-box for separate Main and Auxiliary scoreboards lets operators control several displays with one controller, and they can also switch jacks to control individual boards using multiple controllers.

2. Route the cable from the J-box on the control console end to a J-box near the display.
3. Install the $^1/_4$" phone plug (Daktronics part # 0L-40683) to the scoreboard end of the cable. Be sure to connect the cable shielding only in the J-box on this end. DO NOT connect cable shielding at the J-box near the control console.
4. Insert the plug into the J31 – SIGNAL IN jack located on the top of the scoreboard.
5. Connect a signal cable from the J-box on the control console end to the J1, J2, or J3 jack on the back of the All Sport 5000/5500 console (or J1/J2 on the All Sport 1600).
6. If using a Main Clock Start/Stop Switch (0A-1166-0003), connect it to the J4 jack on the All Sport 5000/5500 console.

BB-2117 & BB-2119 Power/Signal Connection

Route the interconnect cable (P51) located in the left side of the BB-2117/BB-2119 up through the hole in the top of the cabinet into the hole in the bottom of the BB-2116 and connect to a mating interconnect cable (J51).

3.5 Statistics Display & Hockey Module Signal Connection

Figure 11 shows the connections required between a wired scoreboard and two statistics displays. The same signal cable routing applies to hockey scoring modules. Refer to **Figure 6** for more information about connecting the signal wiring that runs from the scoreboard to the controller. Refer also to **Drawing A-124688** in **Appendix B**.

1. Follow steps 1-6 in **Section 3.4**.
2. Connect a $^1/_4$" phone plug between the J32 – SIGNAL OUT jack on top of the scoreboard to the J31 – SIGNAL IN jack on top of the right (GUEST) stat panel or scoring module.
3. Connect another $^1/_4$" phone plug between the Signal Out (J32) jack on top of the right (GUEST) stat panel or scoring module to the J31 – SIGNAL IN jack on top of the left (HOME) stat panel or scoring module.

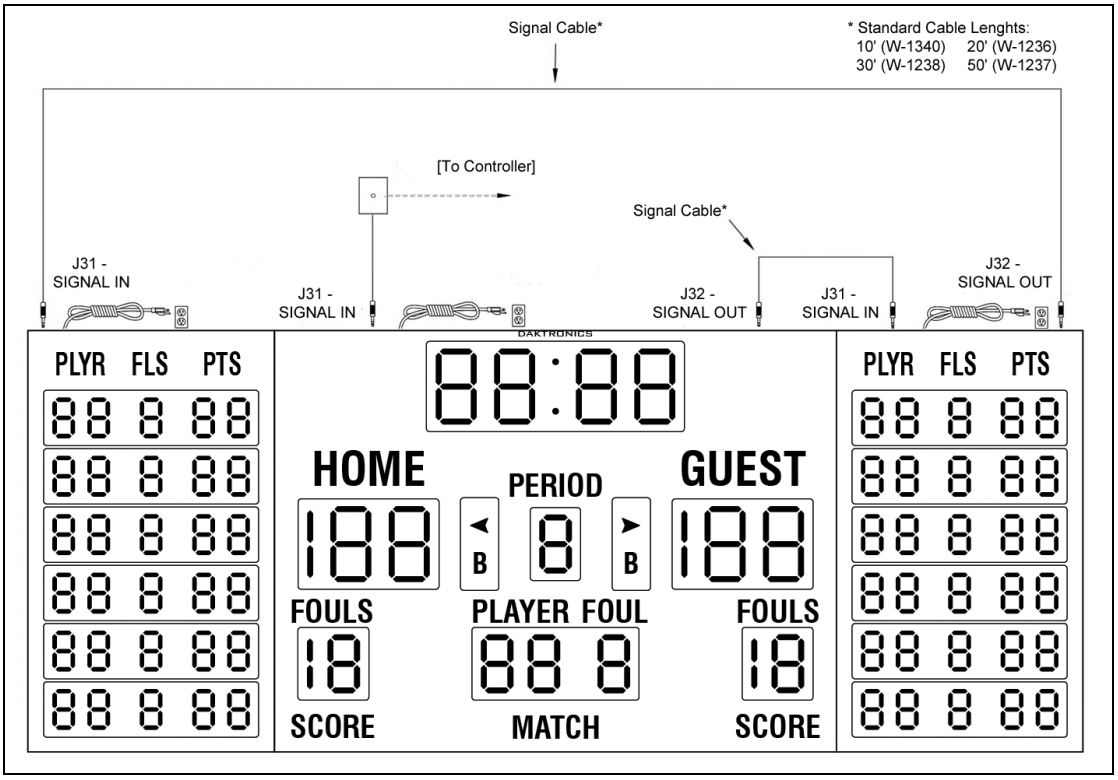


Figure 11: *Statistic Display Installation*

Note: If any scoring modules are to be mounted below the main scoreboard, ensure the right (GUEST) scoring module has a signal cable connected to the SIGNAL IN jack and another cable running from the SIGNAL OUT jack to the SIGNAL IN jack of the left (HOME) scoring module prior to securing the upper scoreboard cabinet(s).

H-2103 Power/Signal Connection

H-2103 hockey scoring modules must receive power and signal from an H-2102 or H-2115. H-2103 modules may be placed above, below, or beside other scoreboard sections and are equipped with digit jacks on both the top and the bottom of the cabinet. Connect the two DIGIT INPUT jacks (J11 and J12) to the matching DIGIT OUTPUT jacks (J11 and J12) using the included 9-pin to 9-pin cables.

3.6 Shot Clock Signal Connection

For permanent shot clock installations, refer to **Drawing A-124688** in **Appendix B**.

Drawing A-124688 also shows signal wiring to control console for portable shot clock installations. Refer to **Drawing A-98293** for a typical installation of a shot clock mounted to a portable backstop structure.

3.7 Lightning Protection

The use of a disconnect near the scoreboard to completely cut all current-carrying lines significantly protects the circuits against lightning damage. In order for this system to provide protection, the power must be disconnected when the scoreboard is not in use.

The control console should also be disconnected from power and from the signal junction box when the system is not in use. The same surges that may damage the scoreboard's driver can also damage the console's circuitry.

Section 4: Daktronics Exchange and Repair & Return Programs

4.1 Exchange Program

The Daktronics Exchange Program is a service for quickly replacing key components in need of repair. If a component fails, Daktronics sends a replacement part to the customer who, in turn, returns the failed component to Daktronics. This decreases equipment downtime. Customers who follow the program guidelines explained below will receive this service.

Before Contacting Daktronics

Identify these important numbers:

Display Assembly Number:_____
Display Model Number:_____
Job/Contract Number: _____
Date Manufactured/Installed: _____
Daktronics Customer ID Number: _____

To participate in the Exchange Program, follow these steps:

1. **Call Daktronics Customer Service.**

Market Description	Customer Service Number
Schools (including community/junior colleges), religious organizations, municipal clubs and community centers	877-605-1115
Universities and professional sporting events, live events for auditoriums and arenas	866-343-6018

2. **When the exchange part is received, mail the old part to Daktronics.**
   If the replacement part fixes the problem, send in the problem part being replaced.
   a. Package the old part in the same shipping materials in which the replacement part arrived.
   b. Fill out and attach the enclosed UPS shipping document.
   c. Ship the part to Daktronics.

3. **The defective or unused parts must be returned to Daktronics within 5 weeks of initial order shipment.**

   If any part is not returned within five (5) weeks, a non-refundable invoice will be presented to the customer for the costs of replenishing the exchange parts inventory with a new part.

   Daktronics reserves the right to refuse parts that have been damaged due to acts of nature or causes other than normal wear and tear.

4.2 Repair & Return Program

For items not subject to exchange, Daktronics offers a Repair & Return Program. To send a part for repair, follow these steps:

1. **Call or fax Daktronics Customer Service:**
   Refer to the appropriate market phone number in the chart on the previous page.
   Fax: 605-697-4444

2. **Receive a case number before shipping.**
   This expedites repair of the part.

3. **Package and pad the item carefully to prevent damage during shipment.**
   Electronic components, such as printed circuit boards, should be placed in an antistatic bag before boxing. Daktronics does not recommend using packing 'peanuts' when shipping.

4. **Enclose:**
   - name
   - address
   - phone number
   - the case number
   - a clear description of symptoms

Shipping Address

Daktronics Customer Service
[Case #]
201 Daktronics Drive, Dock E
Brookings, SD 57006

4.3 Daktronics Warranty and Limitation of Liability

The Daktronics Warranty and Limitation of Liability is located in **Appendix C**. The Warranty is independent of Extended Service agreements and is the authority in matters of service, repair, and display operation.

Section 5: Scoreboard Options

5.1 Horns

Daktronics indoor scoreboards are equipped with a 120 VAC vibrating horn mounted behind the scoreboard face. The horn sounds automatically when the period clock counts down to zero, or when manually triggered by the operator using the control console.

Installation of an optional 12 VDC horn is detailed in **Drawing A-148960** in **Appendix B**. Louder trumpet horns are also available. Contact Daktronics for information and pricing.

Adjusting Horn Volume

CAUTION: The scoreboard horn is a 120 VAC device. Turn off the power to the scoreboard before adjusting the horn.

The volume for the electronic, buzzer-type horn is set at its maximum level at the factory. If the horn is too loud, reduce its volume by adjusting the setscrew mounted in the front of the horn. A plastic tip on the screw touches the horn's diaphragm, reducing the volume. Turn the screw clockwise and test the volume by operating the horn from the scoreboard control console. Continue adjusting and testing until the desired volume level is obtained.

Note that with the noise of spectators, the horn will not seem as loud as when it is being tested in an empty area, so be sure to set the volume according to the acoustics of the facility.

5.2 Radio Control

Radio control is an option for most Daktronics indoor scoreboards. The system provides scoreboard control via a 2.4 GHz, extra-high frequency FM signal.

The radio transmitter and receiver are not standard equipment. This setup requires a control console equipped with a radio transmitter as well as a radio receiver plugged into the driver/power enclosure and mounted internally to the front panel of the scoreboard.

For additional information about this option, contact a Daktronics representative; for complete information on setting up radio communication control, refer to the **Gen V Radio Installation Manual (ED-13831)** or the **Gen VI Radio Installation Manual (DD2362277)**, both available online at www.daktronics.com/manuals.

5.3 Visual Horn Indicator (VHI)

In addition to the horn, Daktronics offers a visual horn indicator (VHI) that lights up when the buzzer sounds. To install a VHI, users must tap into the existing horn wiring to provide power and signal. For more information about installing the VHI option, including details on the inputs, outputs, and switches of a shot clock relay board that controls when the VHI should be turned on, refer to the **VHI (ED-13397)** or **BB-2133 (ED-13806) Installation Instructions**, both available online at www.daktronics.com/manuals.

5.4 Light Strips

LED light strips are a common option for backstops to indicate the end of the period or to show that that the shot clock time has expired. For installations that use backstop LED light strips, refer to the **LED End-of-Period Basketball Lighting Display Manual (ED-13652**), available online at www.daktronics.com/manuals.

5.5 Changeable Captions

Team name and statistics caption kits contain hardware for one caption only and consist of an upper caption retainer, a lower caption retainer, a changeable caption panel and screws. The standard HOME and GUEST captions are applied directly to the face of the scoreboard. Team name captions are on changeable panels that fit into retainers mounted above and below the standard captions. If these retainers are not already present, attach the retainers included with the caption kit. Caption kits are also available for certain statistics display models to switch between basketball, volleyball, wrestling, and hockey modes.

Refer to **Drawing A-1132576** in **Appendix B** for changeable caption installation instructions.

5.6 Time Outs Left (TOL) Digits

Certain scoreboards have the option to add a time outs left (TOL) digit for both the home and guest teams. These digits are installed by simply unscrewing the blank face panel, connecting and securing the digit, and manually applying the "T.O.L." caption. Refer to **Drawing A-149030** in **Appendix B** for more information.

5.7 Double Bonus Indicators

All of the clock/score basketball scoreboards in this manual have the option to include double-bonus indicators, which are factory installed. This option is illustrated in the electrical and signal specification drawings attached to the product specification sheets listed in **Appendix A** for each scoreboard model.

5.8 Team Name Message Centers & Electronic Captions

Team Name Message Centers (TNMCs) are programmable LED displays that allow users to show custom Home and Guest names. TNMCs are typically ordered factory-installed but can be field-mounted after the scoreboard is in place. Electronic captions, on the other hand, are pre-programmed to only show specific labels to match the captions for a particular sport mode, making it much simpler to switch between sports. For more information about TNMCs or electronic captions, contact a Daktronics representative or refer to the service manual listed in **Section 1.2**.

5.9 Goal Lights

For hockey installations involving optional goal lights, refer to the **Indoor Hockey Goal Lights Manual (ED-13358)**, available online at www.daktronics.com/manuals.

Appendix A: Specifications

All of the product specification sheets for the scoreboards in this manual are listed below. Product-specific mechanical and electrical drawings are included with each spec sheet.

If a specification sheet is incorrect or missing, they are all available for download online:

- When viewing the digital version of this manual, simply click a link below to open it.
- When referencing the printed version of this manual, open an Internet browser and go to http://www.daktronics.com/Web%20Documents/HSPR-Documents/DD#######.pdf (replace "DD#######" with one of the Spec Sheet numbers shown below).

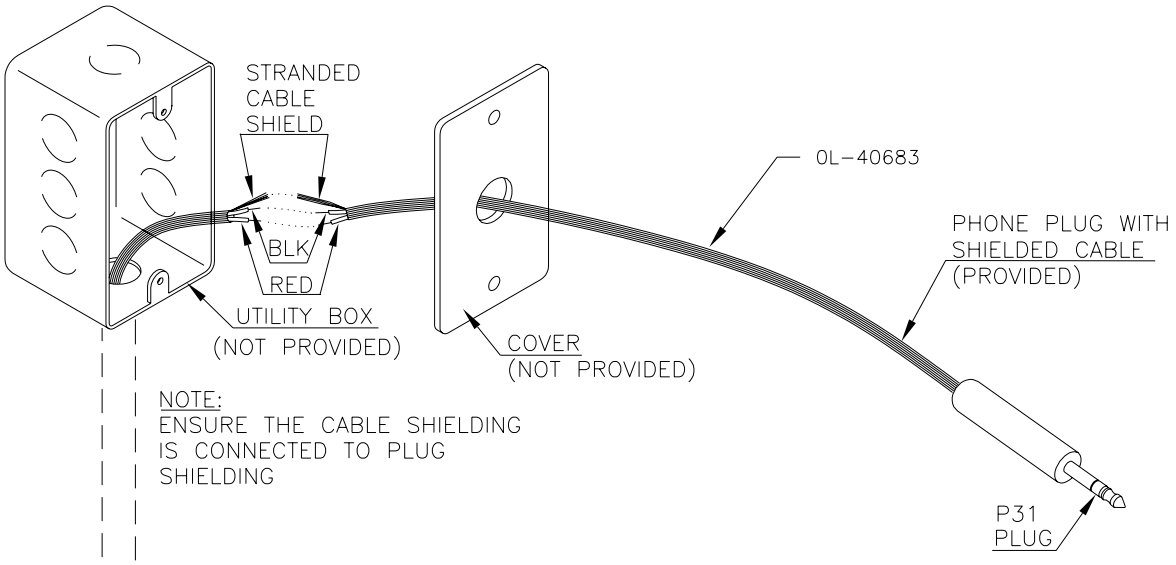
Note: Refer to **Figure 1** to determine a scoreboard's model number.

Model	Spec Sheet	Model	Spec Sheet	Model	Spec Sheet
BB-2101	DD2481847	BB-2143	DD2481927	H-2106	DD2541499
BB-2103	DD2481852	BB-2144	DD2481929	H-2108	DD2541505
BB-2105	DD2481855	BB-2152	DD2061941	H-2111	DD2541518
BB-2107	DD2481865	BB-2153	DD2213495	H-2114	DD2541521
BB-2109	DD2481869	BB-2155	DD2457495	H-2115	DD2541522
BB-2111	DD2481872	BB-3101	DD2506515	PN-2101	DD2481946
BB-2114	DD2481873	BB-3103	DD2506529	SD-2101	DD2481954
BB-2115	DD2481875	BB-3105	DD2506535	SD-2102	DD2481956
BB-2116	DD2481881	BB-3107	DD2506542	SD-2103	DD2481959
BB-2117	DD2481884	BB-3114	DD2506553	SD-2104	DD2481962
BB-2119	DD2481889	BB-3115	DD2506570	SD-2106	DD2481964
BB-2121	DD2481893	BB-3121	DD2506571	SD-3101	DD2506601
BB-2122	DD2481896	BB-3123	DD2506573	SD-3102	DD2506604
BB-2123	DD2481901	BB-3125	DD2506580	SD-3103	DD2506606
BB-2125	DD2481911	BB-3142	DD2506587	TI-2030	DD1747844
BB-2130	DD2481915	H-2101	DD2541481	TI-2101	DD2594852
BB-2131	DD2481917	H-2102	DD2541488	TI-2102	DD2594853
BB-2132	DD2481921	H-2103	DD2541491	TI-2200	DD2594855
BB-2142	DD2481922	H-2104	DD2541494	VB-2101	DD2568754

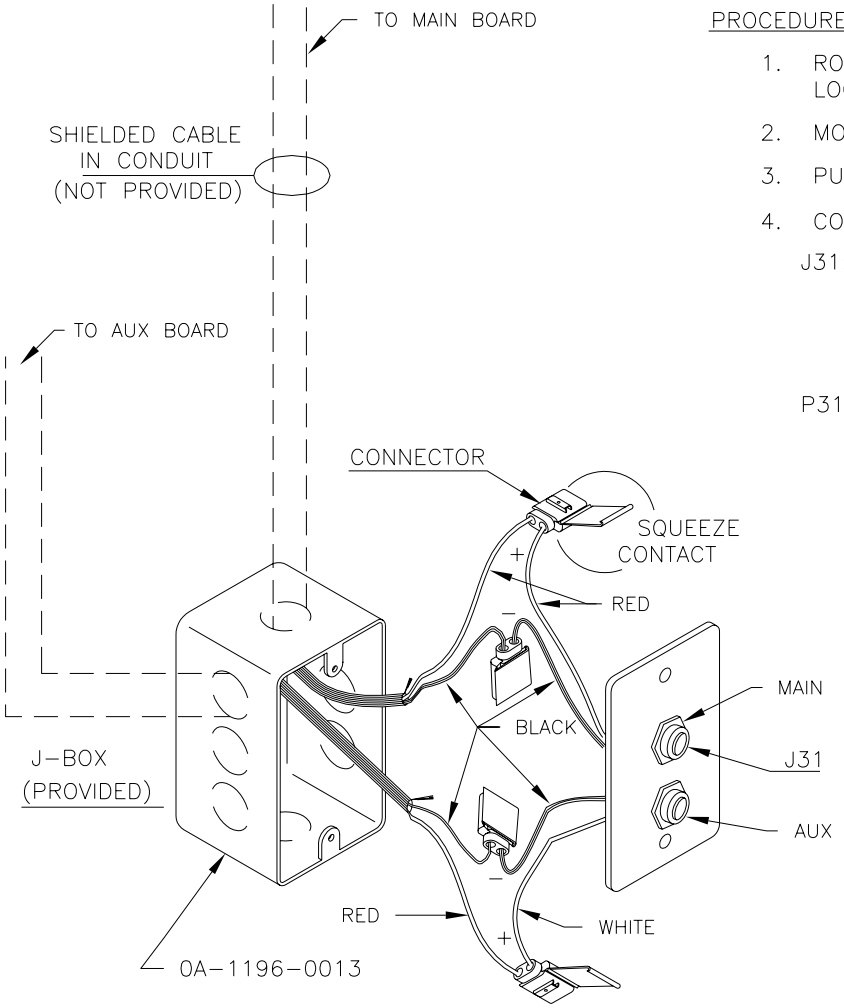
Appendix B: Reference Drawings

Drawing Title	*Drawing Number*
Signal Connection; Installation	**A-28124**
Backstop Mounting Suggestions	**A-91230**
Wiring for Shot Clock on Portable Backstop	**A-98293**
Block Diagram: AS5000 BB- VB and WR #1	**A-124686**
Block Diagram: AS5000 BB- VB and WR #3	**A-124688**
Block Diagram, A/S 3000 or 5000 Hockey	**A-124689**
Schematic; Dual 1/4" Phone J-box w/ Shunt Jack	**A-125316**
12V DC Horn Option Installation	**A-148960**
T.O.L. Option Installation	**A-149030**
Corner Mounting	**A-150831**
ID or Ad Panel Mounting to Scoreboard	**A-156134**
Hockey Scoreboard Configurations	**A-169166**
Changeable Team Name Caption Installation	**A-1132576**
Suspension Lift Eye Installation	**A-1130959**

DISPLAY LOCATION



NOTE:
ENSURE THE CABLE SHIELDING IS CONNECTED TO PLUG SHIELDING



PROCEDURE

1. ROUTE CONDUIT BETWEEN CONTROL AND DISPLAY LOCATIONS.
2. MOUNT BOXES.
3. PULL CABLE THROUGH CONDUIT.
4. CONNECT CABLE TO J31 AND P31

   J31: USE CONNECTORS PROVIDED. INSERT WIRES INTO CONNECTOR AND SQUEEZE CONTACT DOWN WITH PLIERS. SNAP PLASTIC COVER SHUT.

   P31: CONNECT WIRES TO CABLE AS FOLLOWS:

   J31 RED TO P31 RED (+)

   J31 BLK TO P31 BLK (–)

   J31 SHIELD TO P31 SHIELD

NOTE!!

DO NOT CONNECT CABLE SHIELD AT CONTROL CONSOLE END

CONTROL LOCATION

REV.	DATE	DESCRIPTION	BY	APPR.
05	30 JUL 03	BOLD FACED GROUNDING NOTE	TLH	
04	17 JUN 03	CHANGED GROUDING PROCEDURES	JJC	MWM
3	17 JAN 02	ADDED AUX TO J-BOX	JJS	
2	25 MAR 92	CHANGED WHITE TO RED	JTC	
1	05 NOV 91	REDREW ON A-SIZE ON ACAD.	JLH	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: BASKETBALL

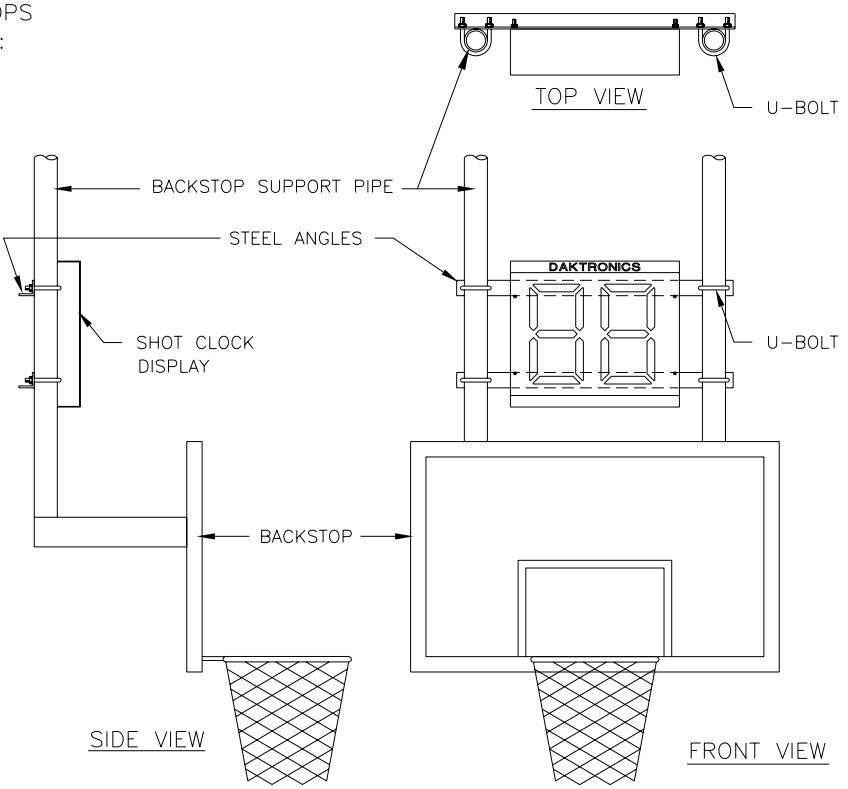
TITLE: SIGNAL CONNECTION; INSTALLATION

DES. BY: AVB DRAWN BY: MHART DATE: 15SEP86

REVISION 05 | APPR. BY: AVB | SCALE: NONE

1009-R10A-28124

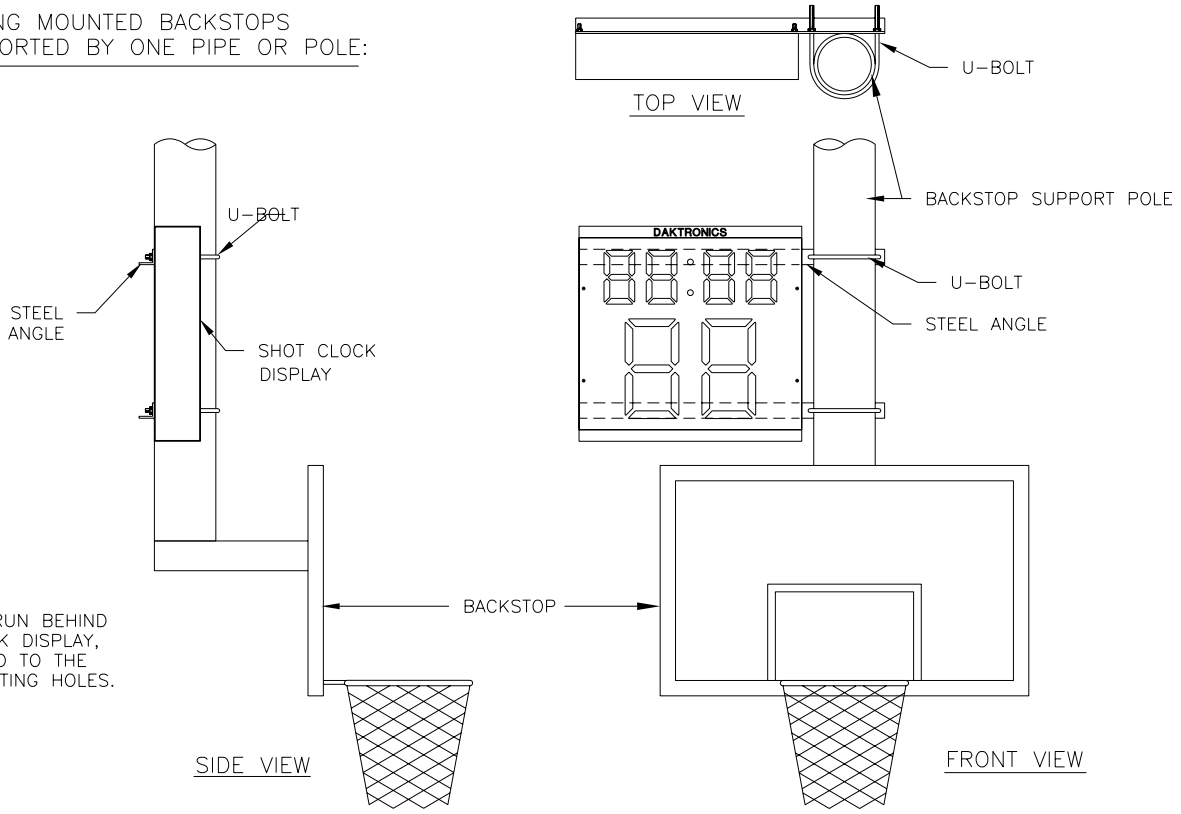
CEILING MOUNTED BACKSTOPS SUPPORTED BY TWO PIPES:



DAKTRONICS DOES NOT SUPPLY THE HARDWARE OR BRACKETS TO MOUNT SHOT CLOCK DISPLAYS TO BACKSTOPS. THE METHODS SHOWN ARE SUGGESTIONS FOR TWO COMMON BACKSTOP TYPES.

DAKTRONICS, INC. IS NOT RESPONSIBLE FOR THE INTEGRITY OR SUITABILITY OF MOUNTING SYSTEMS MANUFACTURED AND INSTALLED BY OTHERS.

CEILING MOUNTED BACKSTOPS SUPPORTED BY ONE PIPE OR POLE:



STEEL ANGLES RUN BEHIND THE SHOT CLOCK DISPLAY, AND ARE BOLTED TO THE DISPLAY'S MOUNTING HOLES.

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

TITLE: BACKSTOP MOUNTING SUGGESTIONS

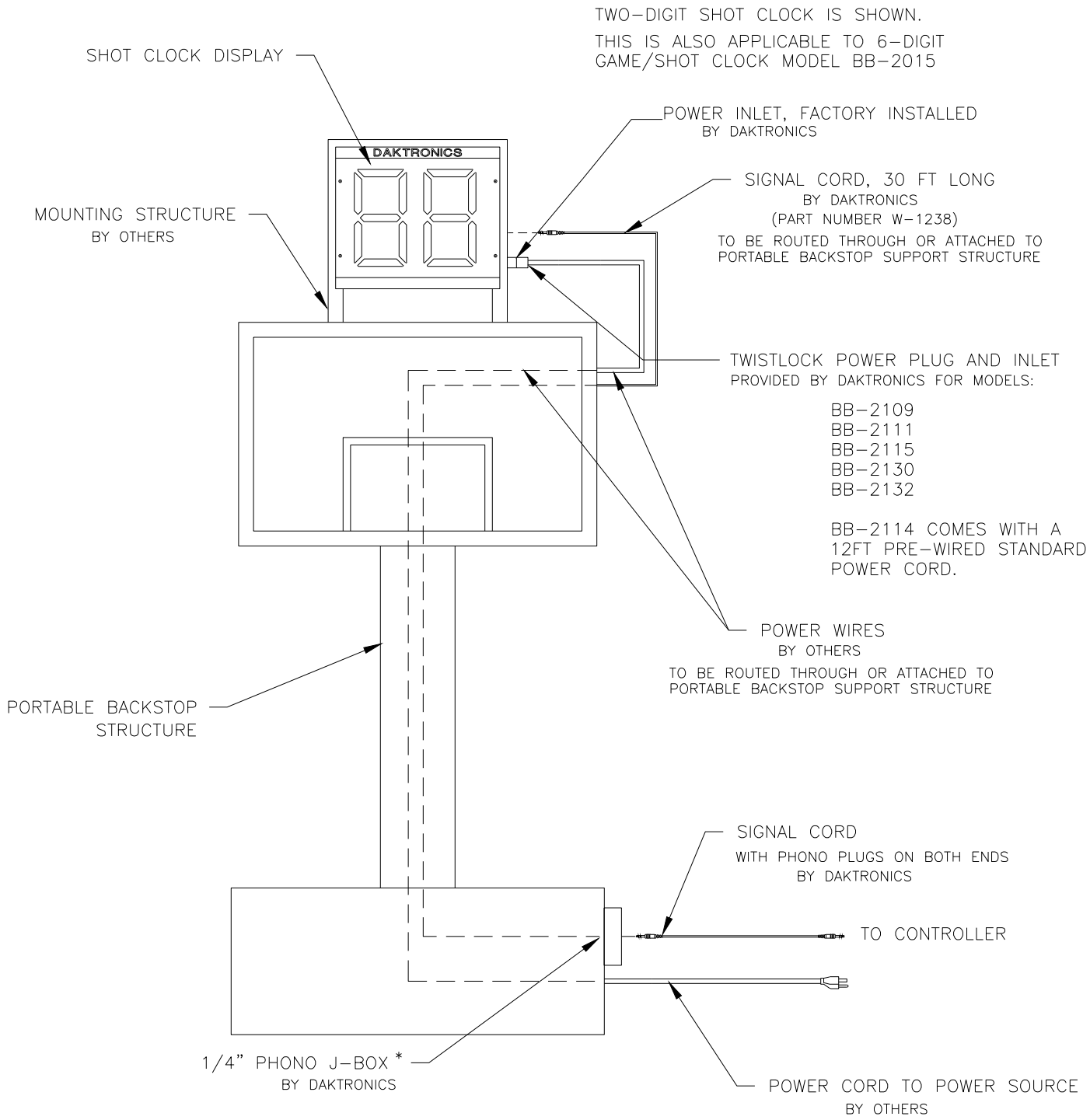
DES. BY: DRAWN BY: A VANBEMMEL DATE: 13 MAR 97

REVISION

APPR. BY:

SCALE: NONE

1009-R10A-91230



* SIGNAL CONNECTORS ARE 1/4" PHONO PLUGS.

REV	DATE:		BY:
03	09 DEC 10	CHANGED WIRING FORMAT	JJD
REV	DATE:		BY:
2	29 JUN 99	DELETED TABLE. ADDED NOTE ABOUT BB-2015	AVB
REV	DATE:		BY:
1	10FEB98	ADDED NEW MODELS TO THE TABLE	DDL

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DO NOT SCALE DRAWING

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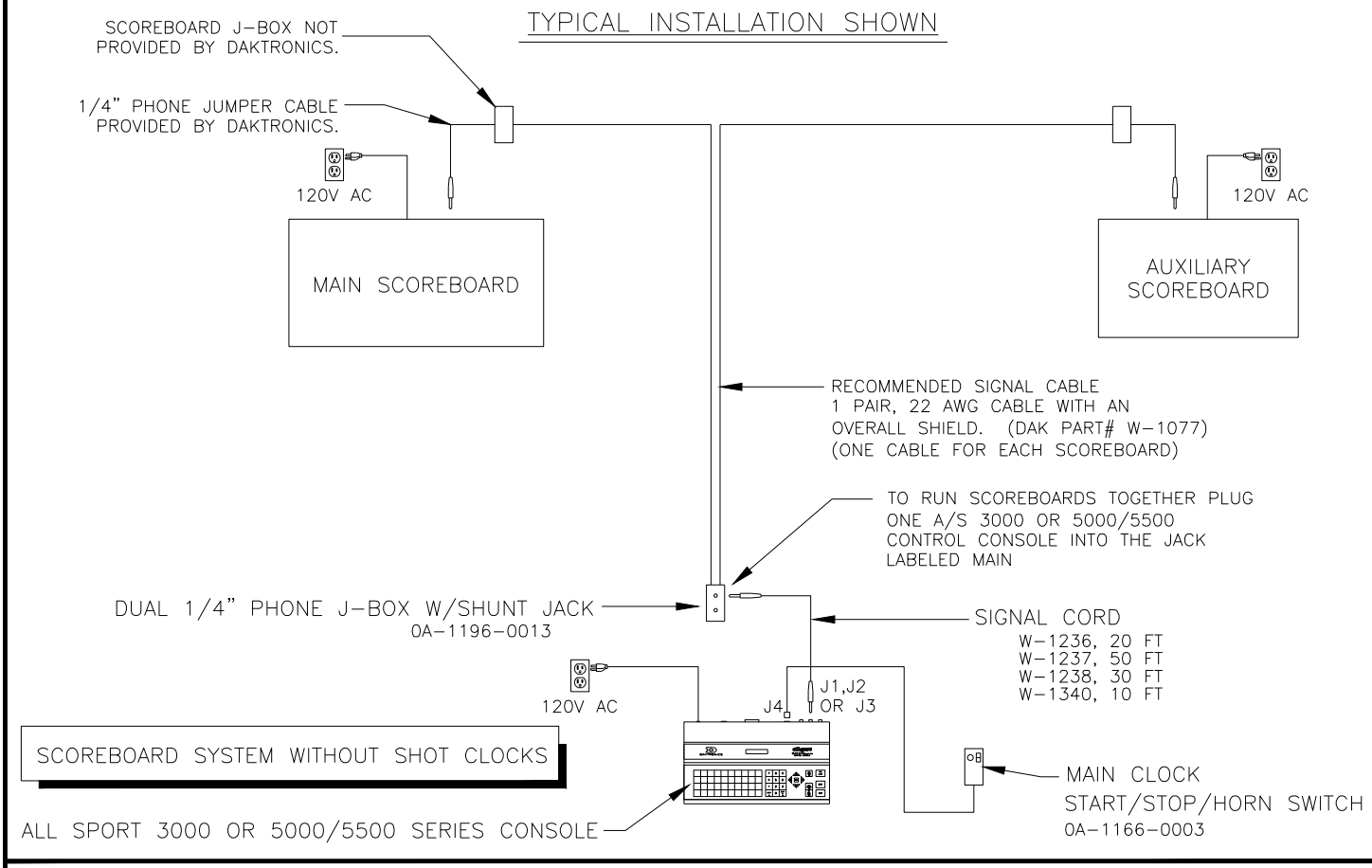
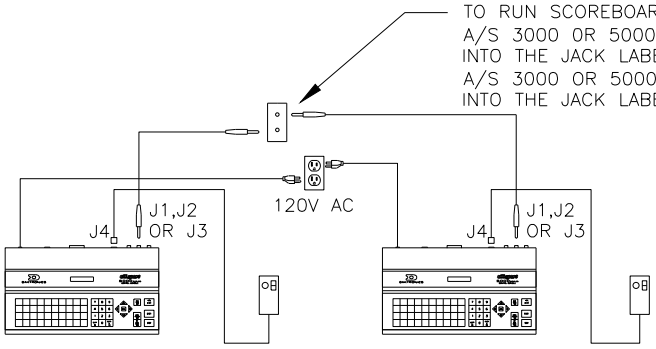
PROJ: BASKETBALL SCOREBOARDS
TITLE: WIRING FOR SHOT CLOCK ON PORTABLE BACKSTOP
DESIGN: AVB | DRAWN: A VANBEMMEL | DATE: 07 NOV 97
SCALE: NONE

SHEET	REV	JOB NO:	FUNC-TYPE-SIZE	
	03	P1009	R-04-A	98293

TYPICAL INSTALLATION SHOWN

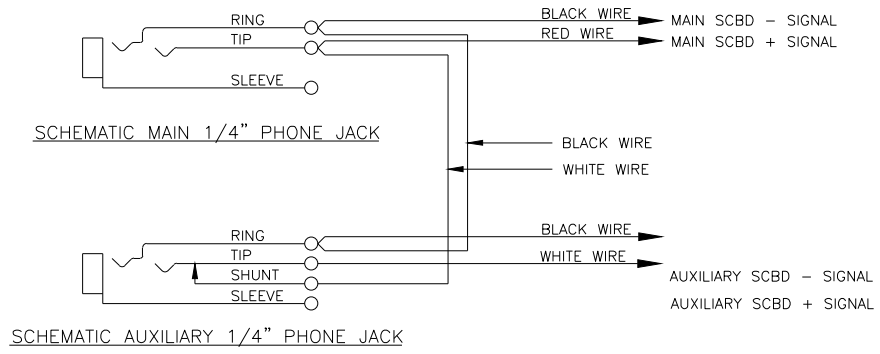

SCOREBOARD J-BOX NOT PROVIDED BY DAKTRONICS.
1/4" PHONE JUMPER CABLE PROVIDED BY DAKTRONICS.
120V AC
MAIN SCOREBOARD
120V AC
AUXILIARY SCOREBOARD
RECOMMENDED SIGNAL CABLE
1 PAIR, 22 AWG CABLE WITH AN OVERALL SHIELD. (DAK PART# W-1077)
(ONE CABLE FOR EACH SCOREBOARD)
TO RUN SCOREBOARDS TOGETHER PLUG ONE A/S 3000 OR 5000/5500 CONTROL CONSOLE INTO THE JACK LABELED MAIN
DUAL 1/4" PHONE J-BOX W/SHUNT JACK
0A-1196-0013
SIGNAL CORD
W-1236, 20 FT
W-1237, 50 FT
W-1238, 30 FT
W-1340, 10 FT
120V AC
J4
J1,J2 OR J3
SCOREBOARD SYSTEM WITHOUT SHOT CLOCKS
ALL SPORT 3000 OR 5000/5500 SERIES CONSOLE
MAIN CLOCK START/STOP/HORN SWITCH
0A-1166-0003

SEPARATE SCOREBOARD CONTROL


TO RUN SCOREBOARDS SEPARATELY PLUG ONE A/S 3000 OR 5000/5500 CONTROL CONSOLE INTO THE JACK LABELED MAIN AND ANOTHER A/S 3000 OR 5000/5500 CONTROL CONSOLE INTO THE JACK LABELED AUXILIARY
120V AC
J4
J1,J2 OR J3
J4
J1,J2 OR J3

0A-1196-0013 J-BOX

TYPICAL 0A-1196-0013 J-BOX WIRING



REV	DATE:		BY:
02	17 AUG 11	UPDATED THE BOARDER AND TITLE BLOCK UPDATED TEXT TO INCLUDE 5500 SERIES	JJL
01	26 APR 00	ADDED A/S 3000	DKD

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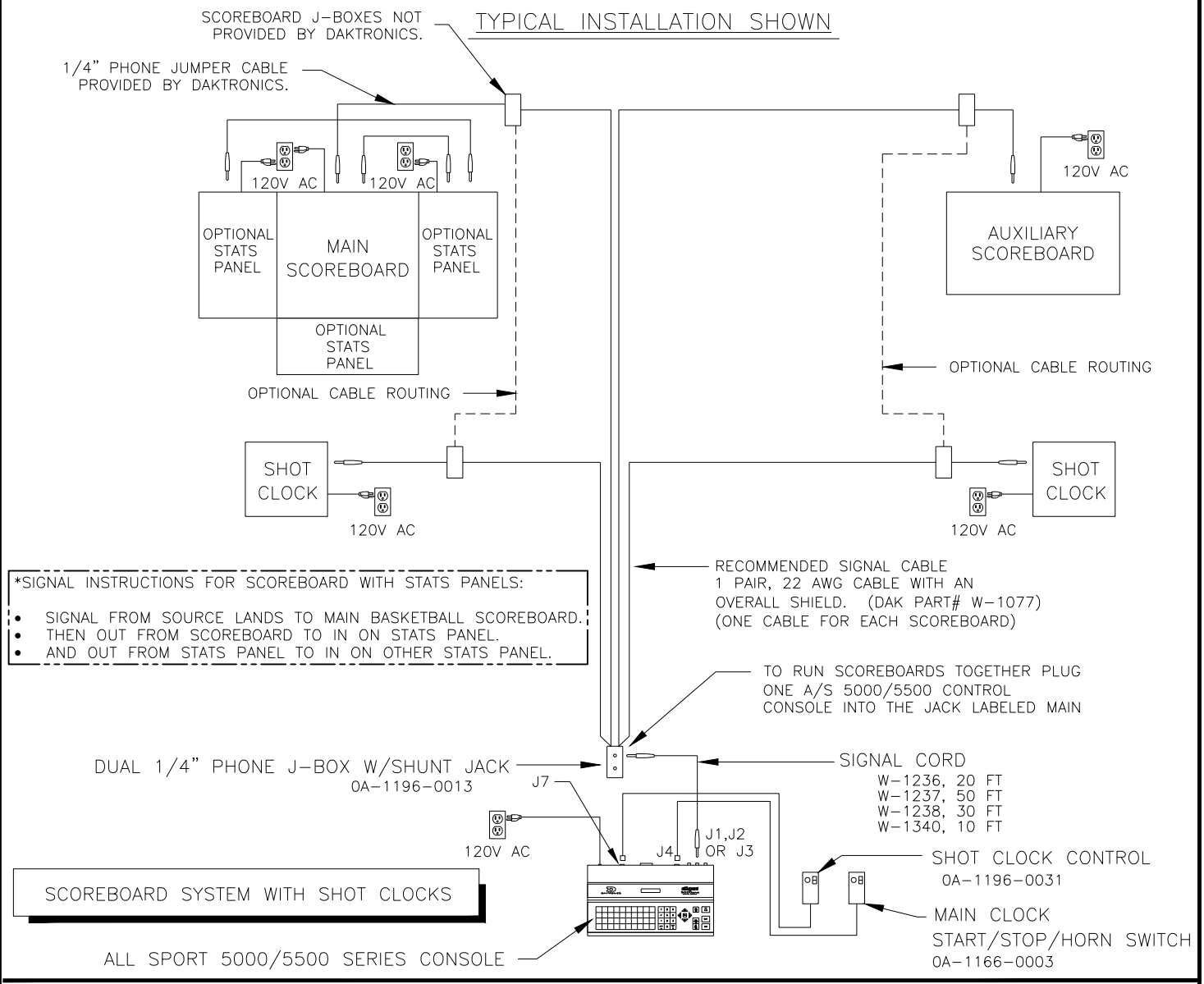
PROJ: ALL SPORT 5000/5500

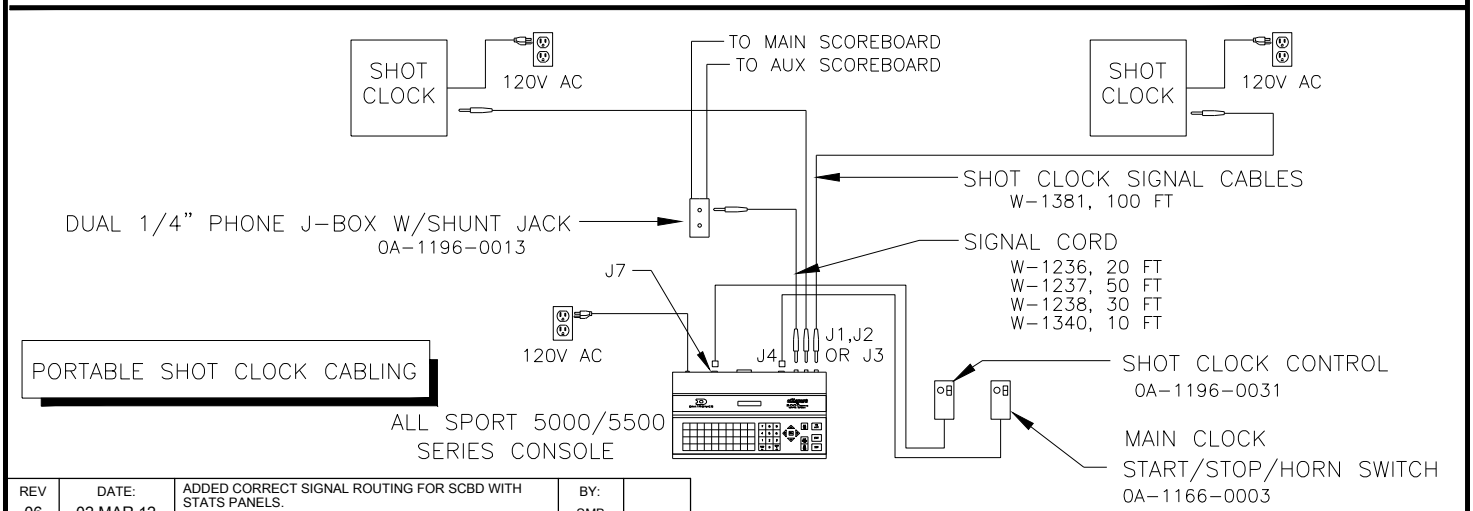
TITLE: BLOCK DIAGRAM: AS5000 BB- VB AND WR #1

DESIGN: | DRAWN: E BRAVEK | DATE: 29 NOV 99

SCALE: NONE

SHEET	REV	JOB NO:	FUNC-TYPE-SIZE	
	02	P1196	R-04-A	124686


TYPICAL INSTALLATION SHOWN
SCOREBOARD J-BOXES NOT PROVIDED BY DAKTRONICS.
1/4" PHONE JUMPER CABLE PROVIDED BY DAKTRONICS.
120V AC
120V AC
OPTIONAL STATS PANEL
MAIN SCOREBOARD
OPTIONAL STATS PANEL
OPTIONAL STATS PANEL
120V AC
AUXILIARY SCOREBOARD
OPTIONAL CABLE ROUTING
OPTIONAL CABLE ROUTING
SHOT CLOCK
120V AC
SHOT CLOCK
120V AC
*SIGNAL INSTRUCTIONS FOR SCOREBOARD WITH STATS PANELS:
• SIGNAL FROM SOURCE LANDS TO MAIN BASKETBALL SCOREBOARD.
• THEN OUT FROM SCOREBOARD TO IN ON STATS PANEL.
• AND OUT FROM STATS PANEL TO IN ON OTHER STATS PANEL.
RECOMMENDED SIGNAL CABLE
1 PAIR, 22 AWG CABLE WITH AN OVERALL SHIELD. (DAK PART# W-1077)
(ONE CABLE FOR EACH SCOREBOARD)
TO RUN SCOREBOARDS TOGETHER PLUG ONE A/S 5000/5500 CONTROL CONSOLE INTO THE JACK LABELED MAIN
DUAL 1/4" PHONE J-BOX W/SHUNT JACK
0A-1196-0013
SIGNAL CORD
W-1236, 20 FT
W-1237, 50 FT
W-1238, 30 FT
W-1340, 10 FT
J7
120V AC
J4
J1,J2 OR J3
SHOT CLOCK CONTROL
0A-1196-0031
MAIN CLOCK START/STOP/HORN SWITCH
0A-1166-0003
SCOREBOARD SYSTEM WITH SHOT CLOCKS
ALL SPORT 5000/5500 SERIES CONSOLE



REV	DATE:		BY:	
06	02 MAR 12	ADDED CORRECT SIGNAL ROUTING FOR SCBD WITH STATS PANELS.	SMB	
REV 5	DATE: 17 AUG 11	UPDATED THE BOARDER AND TITLE BLOCK. UPDATED DRAWING TO INCLUDE 5500 SERIES	BY: JJL	
4	17 JAN 02	CHANGED 0A-1166-0004 TO 0A-1196-0031	JJS	
3	06 SEP 01	ADDED BOTTOM OPTIONAL STATS PANEL TO MAIN BOARD, AND ADDED SIGNAL CABLES TO AND FROM OPTIONAL STATS PANELS.	NW	
2	14 DEC 00	ADDED 120VAC TO SIDE BOARDS OF MAIN SCOREBOARD	NSW	
1	29 DEC 99	ADDED SHOT CLOCK REMOTE START/STOP TO TOP A/S5000 CONTROLLER	EB	

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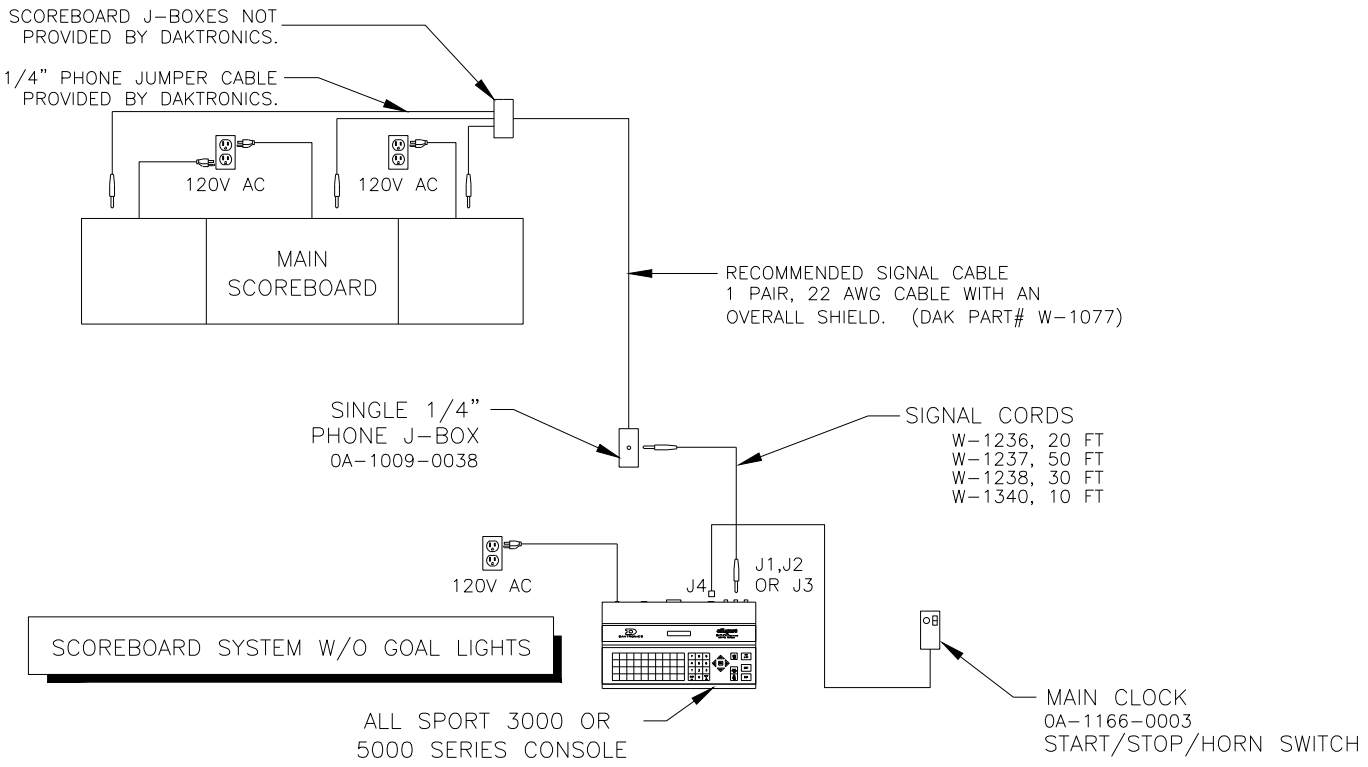
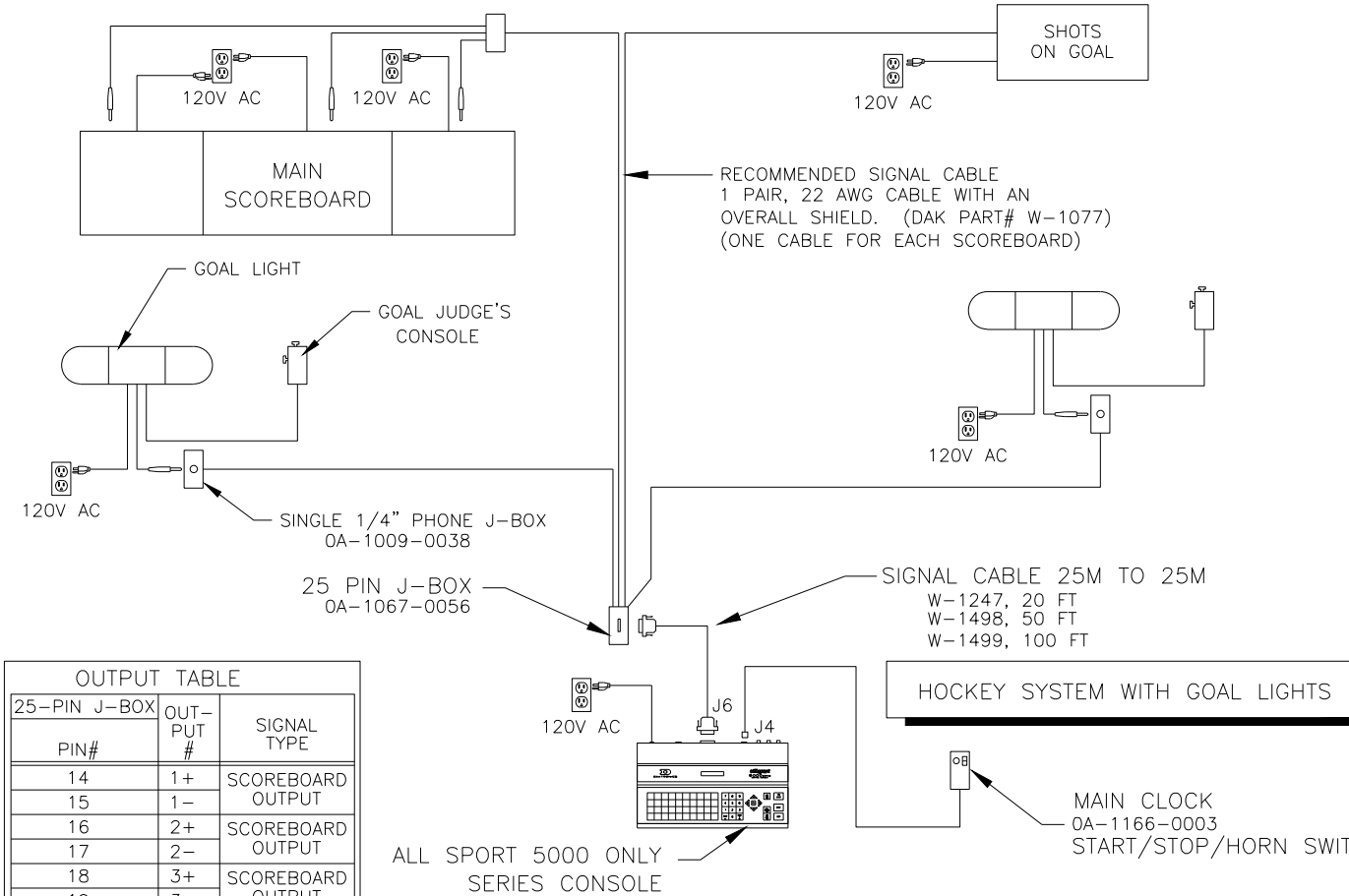
PROJ: ALL SPORT 5000/5500
TITLE: BLOCK DIAGRAM: AS5000 BB- VB AND WR #3
DESIGN: | DRAWN: E BRAVEK | DATE: 29 NOV 99
SCALE: NONE

SHEET	REV	JOB NO:	FUNC-TYPE-SIZE	
	06	P1196	R-04-A	124688





OUTPUT TABLE

25-PIN J-BOX PIN#	OUTPUT #	SIGNAL TYPE
14	1+	SCOREBOARD OUTPUT
15	1-	
16	2+	SCOREBOARD OUTPUT
17	2-	
18	3+	SCOREBOARD OUTPUT
19	3-	
11	+	GOAL LIGHTS
23	-	

REV	DATE:		BY:
02	28 NOV 12	UPDATED PART NUMBERS	KZB
01	26 APR 00	ADDED A/S 3000	DKD

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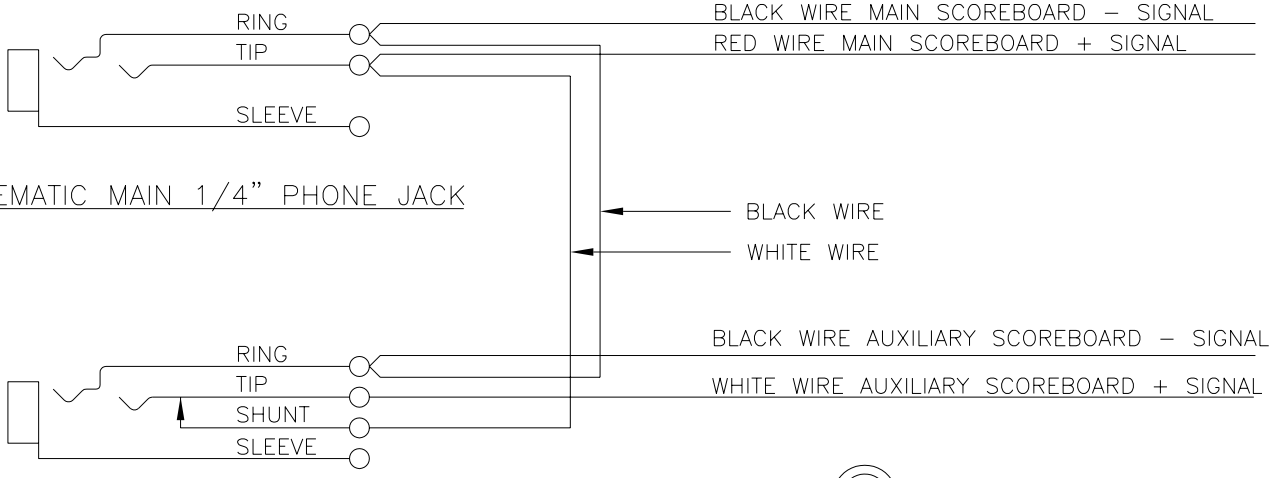
PROJ: ALL SPORT 5000

TITLE: BLOCK DIAGRAM: A/S5000 HOCKEY

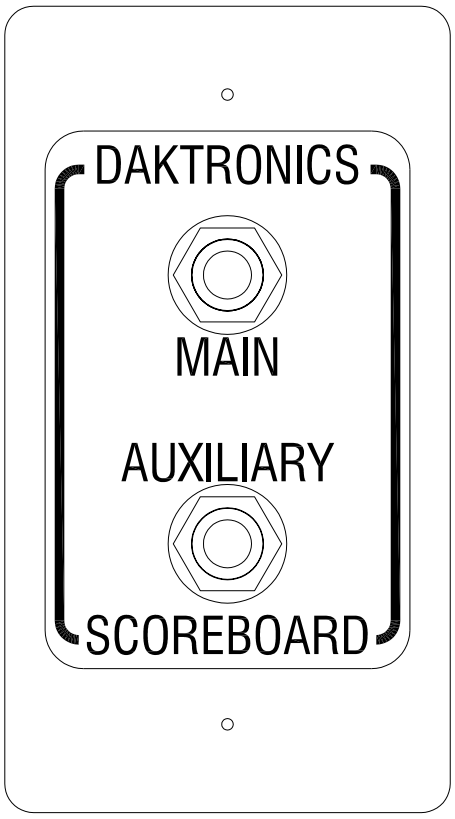
DESIGN:	DRAWN: E BRAVEK	DATE: 29 NOV 99
SCALE: NONE		

SHEET	REV	JOB NO:	FUNC-TYPE-SIZE	
	02	P1196	R - 04 - A	124689

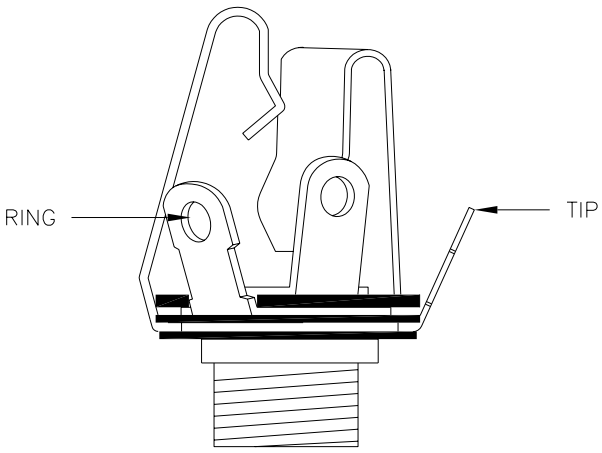


SCHEMATIC MAIN 1/4" PHONE JACK

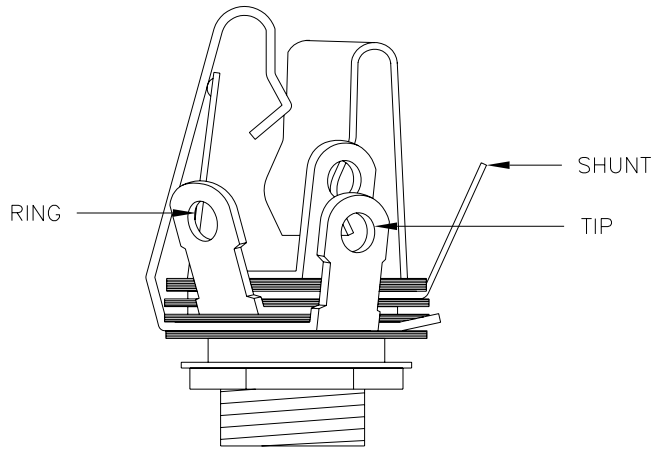
SCHEMATIC AUXILIARY 1/4" PHONE JACK



0A–1196–0013



MAIN
PHONE JACK
J–1003



AUXILIARY
PHONE JACK
J–1131

REV.	DATE	DESCRIPTION	BY	APPR.

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:

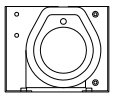
TITLE: SCHEMATIC; DUAL 1/4" PHONE J–BOX W/SHUNT JACK

DES. BY: E BRAVEK DRAWN BY: E BRAVEK DATE: 15 DEC 99

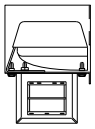
REVISION 00 | APPR. BY: | SCALE: NONE

1196-R03A-125316

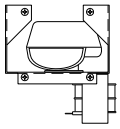
12V DC HORN
IN BRACKET:



TOP VIEW



SIDE VIEW



FRONT VIEW

12V DC HORN OPTION INSTALLATION PROCEDURE

REMOVE THE FOUR SCREWS SECURING THE CLOCK PANEL. DISCONNECT THE PLUGS AT THE BACK OF THE DIGITS, AND UNPLUG THE EXISTING BUZZER TYPE HORN.

REMOVE THE SCREWS THAT ATTACH THE BUZZER HORN TO THE CLOCK PANEL.

MOUNT THE 12V DC HORN TO THE CLOCK PANEL USING THE SCREWS PROVIDED WITH IT. IF MOUNTING HORN IN A UNIVIEW APPLICATION, THE TRANSFORMER WILL HIT THE DIGITS SO NOTE THE FOLLOWING. CUT THE CABLE TIE OFF THE TRANSFORMER HARNESS AND REMOVE TRANSFORMER FROM HORN ASSEMBLY (SAVE HC-1470 SCREWS AS THEY WILL BE REUSED). IN ALTERNATE TRANSFORMER LOCATION MARKED BELOW, DRILL 0.203" (13/64") HOLES @2 IN BACKSHEET FOR TRANSFORMER. USING HC-1470 @2 (SAVED FROM ABOVE) AND HC-1243 @2 (FORWARDED WITH HORN ASSEMBLY), MOUNT TRANSFORMER TO BACKSHEET. MOUNT HORN ASSEMBLY TO CLOCK PANEL AS PREVIOUSLY NOTED.

TAKE THE HORN INTERFACE CARD, WITH HARNESSES CONNECTED TO IT, AND USE THE TAPE TO SECURE IT TO THE BACKSHEET. MAKE SURE IT IS AN OPEN SPOT SO IT DOESN'T GET TOUCHED WHEN THE PANEL IS PLACED BACK ON.

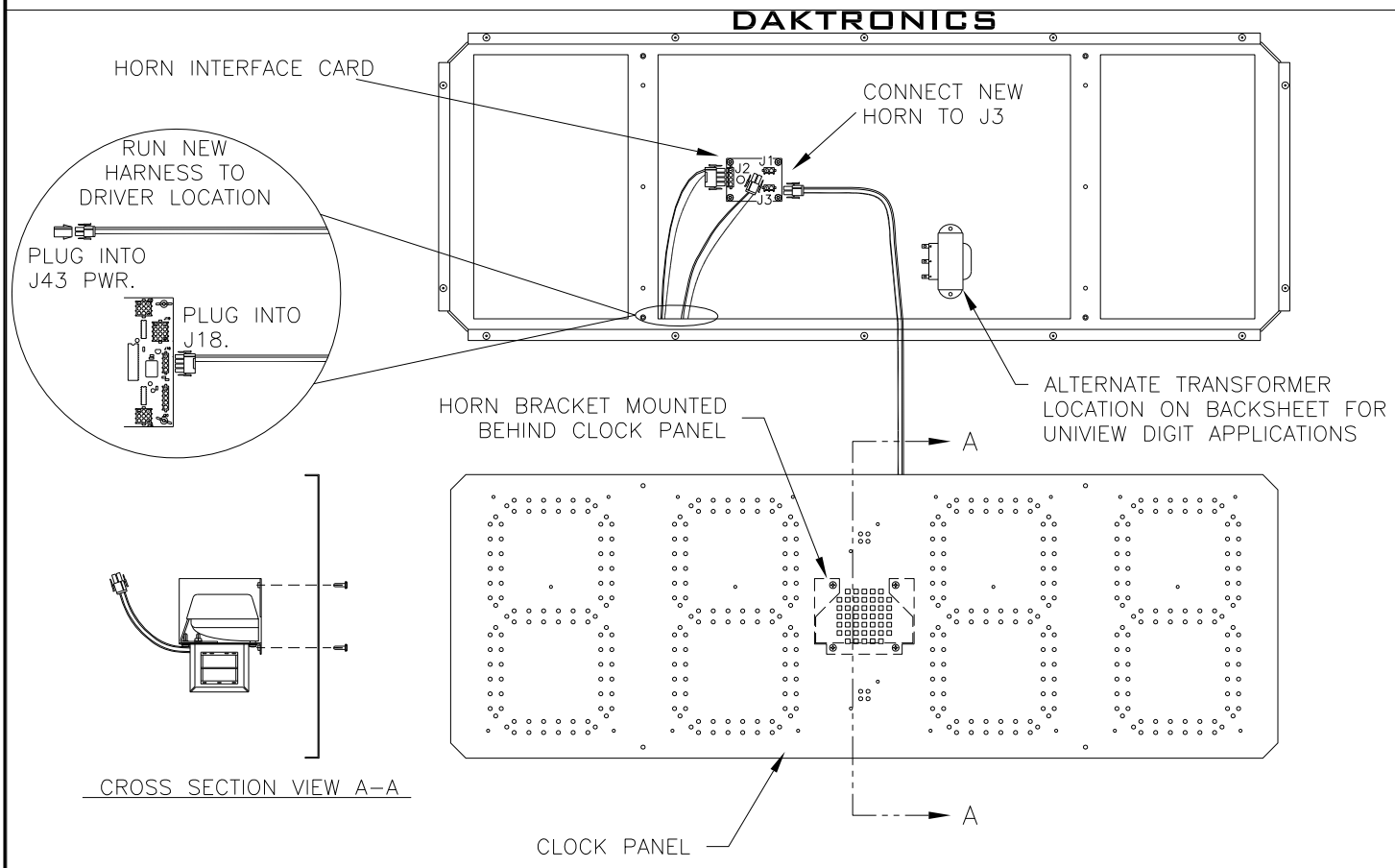
RUN THE TWO NEW HARNESSES TO THE DRIVER. DISCONNECT EXISTING PLUG IN J18 ON DRIVER. CONNECT NEW ONE. DISCONNECT EXISTING PLUG IN THE J43 POWER JACK ON DRIVER TRAY HARNESS THAT WAS FOR THE OLD HORN, AND PLUG IN THE NEW ONE.

CONNECT THE 2-PIN PLUG FROM THE HORN ASSEMBLY TO J3 ON THE HORN INTERFACE CARD.

PLUG THE DIGIT CABLES INTO THE BACKS OF THE DIGITS AND RE-INSTALL THE CLOCK PANEL.

TEST THE HORN BY OPERATING THE SCOREBOARD AND PRESSING THE HORN BUTTON ON THE CONTROL CONSOLE.

FRONT OF SCOREBOARD, CLOCK AREA:



CROSS SECTION VIEW A-A

REV.	DATE	DESCRIPTION	BY	APPR.
03	07 JAN 10	UPDATED INSTALL DRAWING WITH HORN INTERFACE CARD DETAILS AND STEPS.	MWM	
02	20 JUN 06	UPDATED COLON AND HORN LAYOUT. REPLACED UNIVIEW DIGITS WITH PANAVIEW TO SHOW HORN MOUNTING. ADDED UNIVIEW HORN MTG NOTES.	JLF	CW
01	20 JUN 02	CHANGED DIGITS TO UNIVIEW.	ALG	

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DAKTRONICS, INC. BROOKINGS, SD 57006

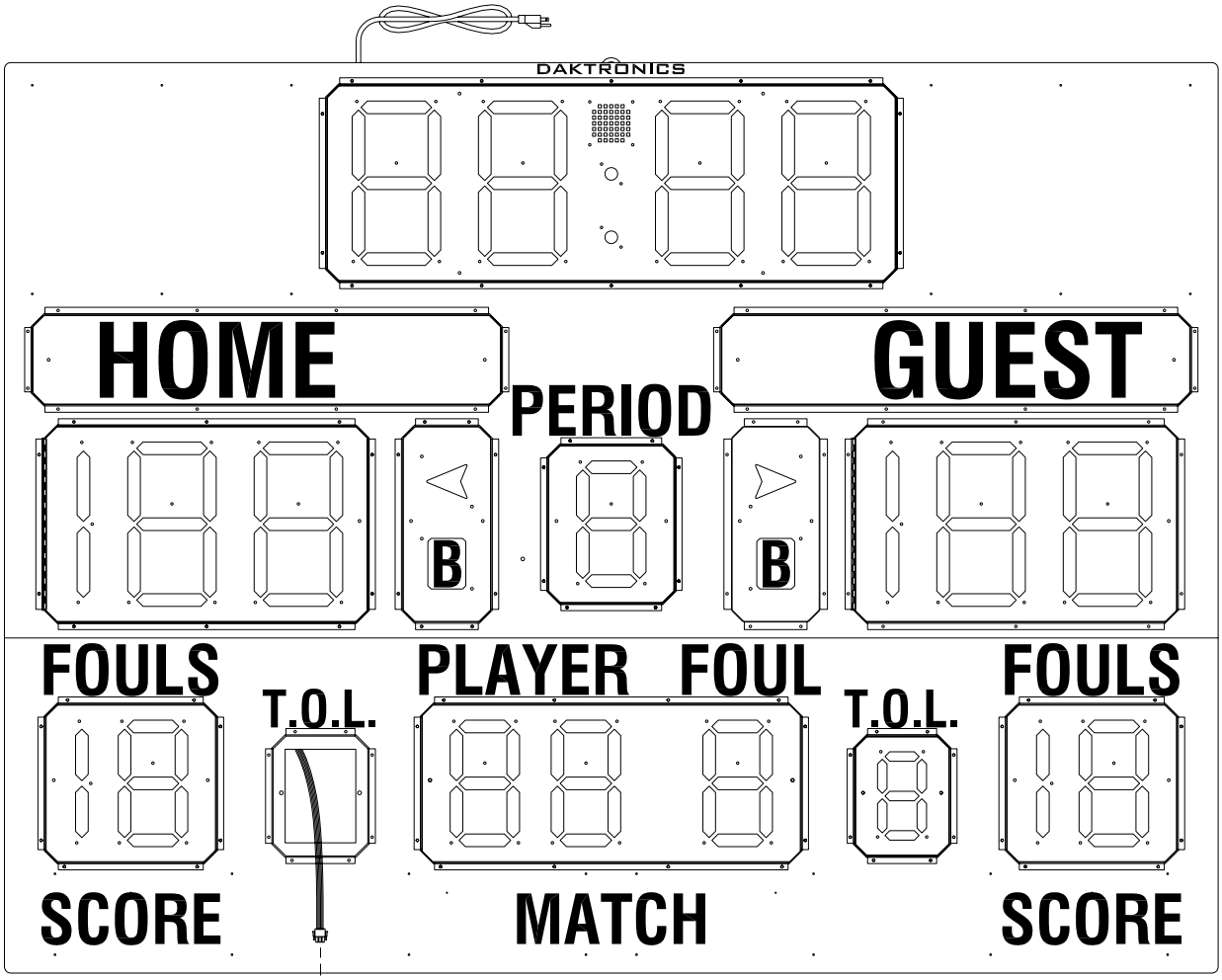
PROJ: TUFF SPORT™ INDOOR SCOREBOARDS

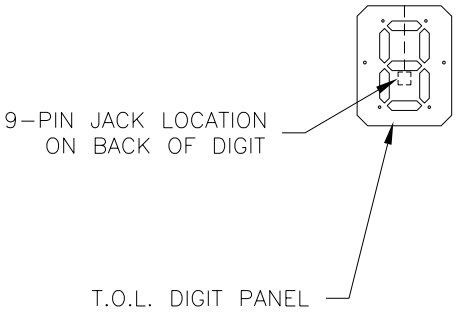
TITLE: 12V DC HORN OPTION INSTALLATION

DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 16 MAY 01

REVISION 03 APPR. BY: SCALE: 1=10

1237-R10A-148960





1. REMOVE THE TWO BLANK PANELS CURRENTLY INSTALLED IN PLACE OF THE T.O.L. DIGITS.

2. LOCATE THE CABLES WITH 9–PIN PLUGS BEHIND THE BLANK PANELS. CONNECT THE PLUGS TO THE MATING JACK ON THE BACK OF EACH DIGIT.

3. INSTALL THE DIGITS IN THE OPENINGS AND SECURE WITH THE SCREWS THAT FORMERLY HELD THE BLANK PANELS.

4. APPLY THE "T.O.L." CAPTIONS ABOVE THE DIGITS.

NOTES:

THE SCOREBOARD IS SHOWN WITH UNIVIEW™ DIGIT TECHNOLOGY. SEE DRAWING A–158550 FOR MORE DETAILS.

REV.	DATE	DESCRIPTION	BY	APPR.
01	20 JUN 02	CHANGED DIGITS TO UNIVIEW.	ALG	

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: TUFF SPORT™ SCOREBOARDS

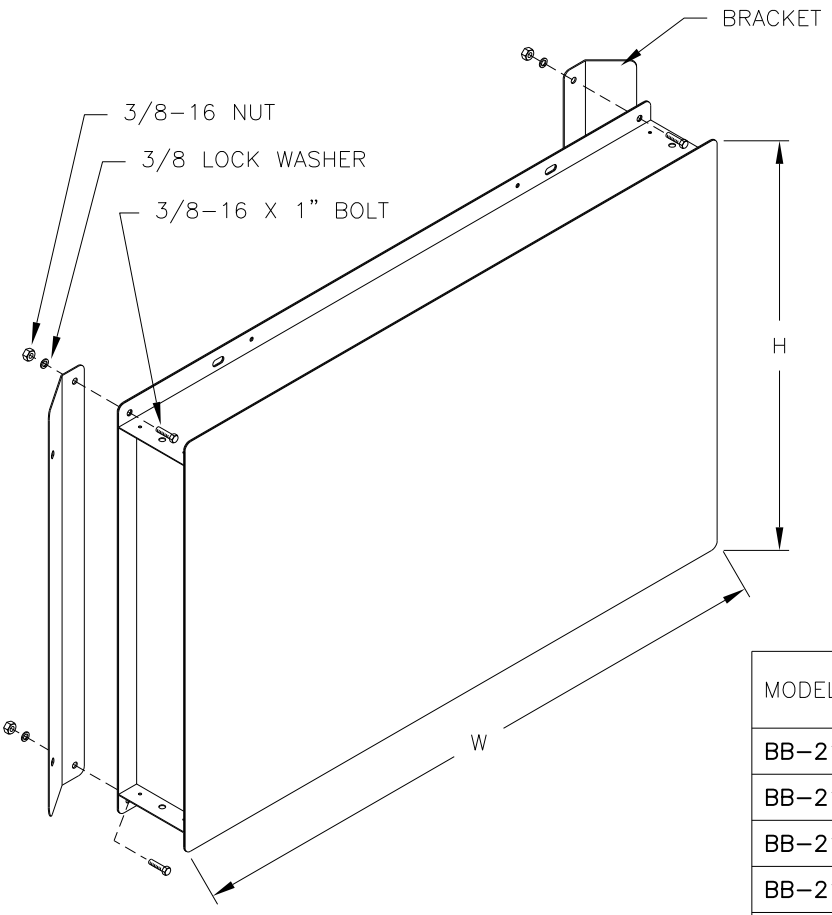
TITLE: T.O.L. OPTION INSTALLATION

DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 17 MAY 01

REVISION APPR. BY:

SCALE: 1=20

1237-R10A-149030

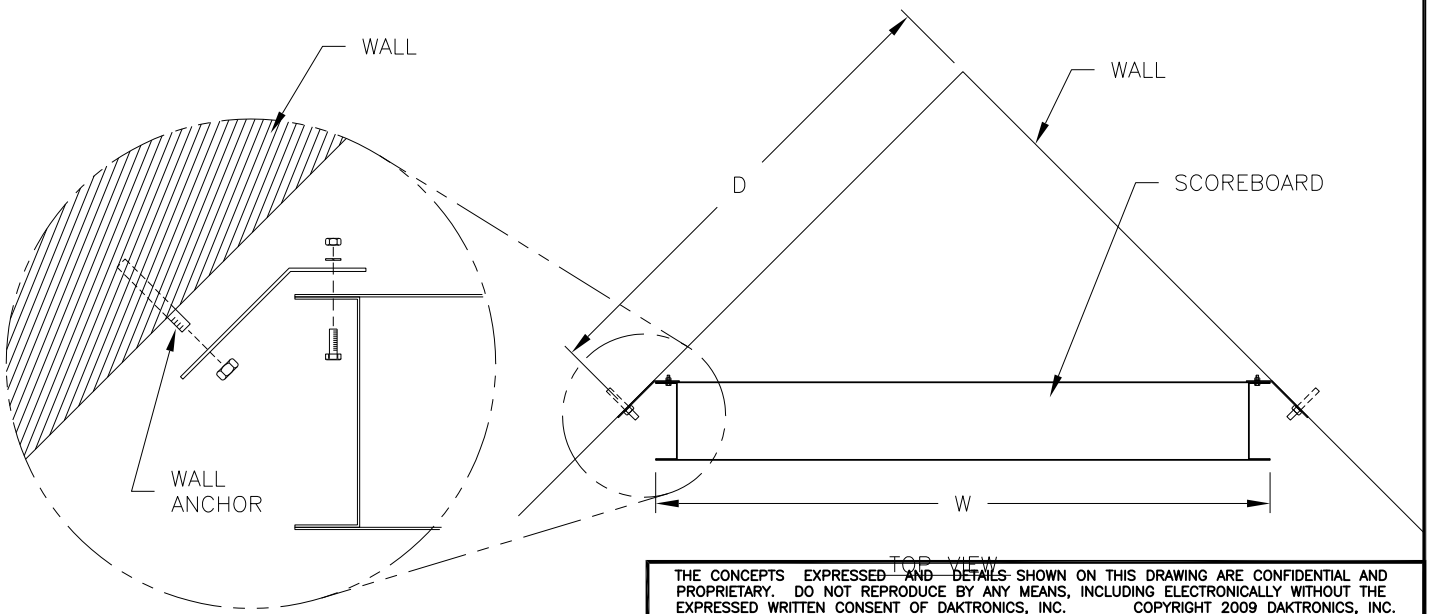


ATTACH THE BRACKETS TO THE BACK OF THE SCOREBOARD USING THE 3/8" HARDWARE PROVIDED.

DRILL HOLES IN THE WALL AT THE APPROPRIATE DISTANCE FROM THE CORNER (DIMENSION D) FOR THE WALL ANCHORS.

MOUNT THE BRACKETS TO THE WALL USING WALL ANCHORS SUITABLE TO THE WALL MATERIALS IN THE FACILITY.

MODEL NO.	HEIGHT DIM. H	WIDTH DIM. W	DISTANCE DIM D
BB–2101/3103	4'–0"	8'–0"	5'–11 1/4"
BB–2103/3103	6'–0"	8'–0"	5'–11 1/4"
BB–2105/3105	4'–0"	10'–0"	7'–4 1/16"
BB–2107/3107	6'–0"	10'–0"	7'–4 1/16"
BB–2142/3142	3'–0"	6'–6"	4'–10 3/8"
BB–2121/3121	2'–6"	10'–0"	7'–4 1/16"



TOP VIEW

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: TUFF SPORT SCOREBOARDS

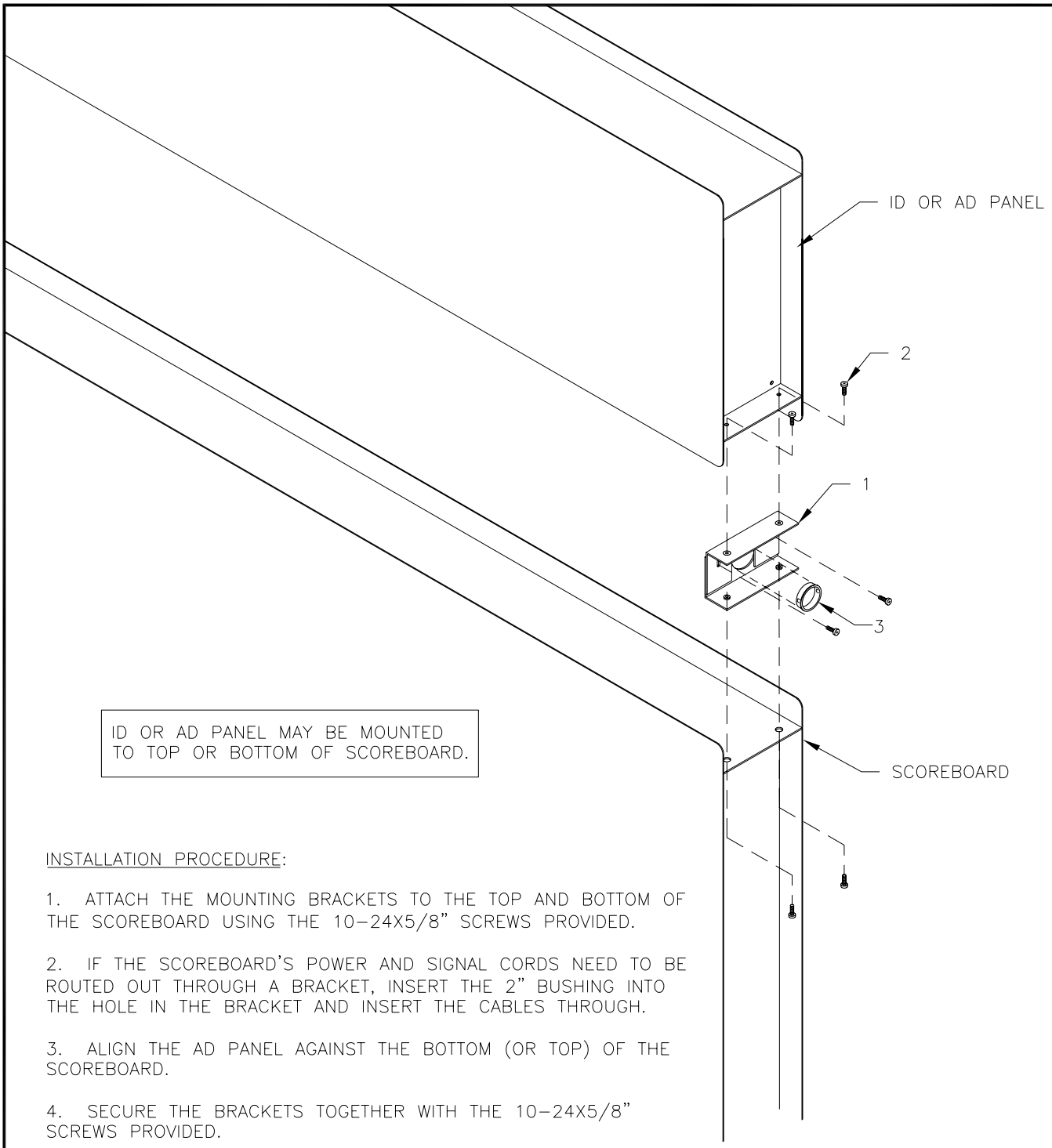
TITLE: CORNER MOUNTING

DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 22 JUN 01

REVISION 01 | APPR. BY: | SCALE: 1=15

1237-R10A-150831

REV.	DATE	DESCRIPTION	BY	APPR.
01	28JAN10	ADD ALL 3xxx MODELS NUMBERS AND ADD BB–2142/3142 AND BB–2121/3131 AND THEIR RESPECTIVE REQUIRED DIMENSIONS	LMIX	



ID OR AD PANEL MAY BE MOUNTED TO TOP OR BOTTOM OF SCOREBOARD.

INSTALLATION PROCEDURE:

1. ATTACH THE MOUNTING BRACKETS TO THE TOP AND BOTTOM OF THE SCOREBOARD USING THE 10-24X5/8" SCREWS PROVIDED.

2. IF THE SCOREBOARD'S POWER AND SIGNAL CORDS NEED TO BE ROUTED OUT THROUGH A BRACKET, INSERT THE 2" BUSHING INTO THE HOLE IN THE BRACKET AND INSERT THE CABLES THROUGH.

3. ALIGN THE AD PANEL AGAINST THE BOTTOM (OR TOP) OF THE SCOREBOARD.

4. SECURE THE BRACKETS TOGETHER WITH THE 10-24X5/8" SCREWS PROVIDED.

	DESCRIPTION	PART NUMBER	QTY
1.	MOUNTING BRACKETS	0S-1237-0058	2
2.	SCREW, 10-24x5/8	HC-1022	12
3.	BUSHING, 2.0 ø	HE-1051	2

REV.	DATE	DESCRIPTION	BY	APPR.
02	18 JUL 06	REPLACED 0M-150458 BRKT WITH 0M-278266-A AND 0M-278266-B BRKTS	KAS	
01	20 JAN 03	REPLACED HC-1470 WITH HC-1022 RIVETS	RJC	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: TUFF SPORT SCOREBOARDS

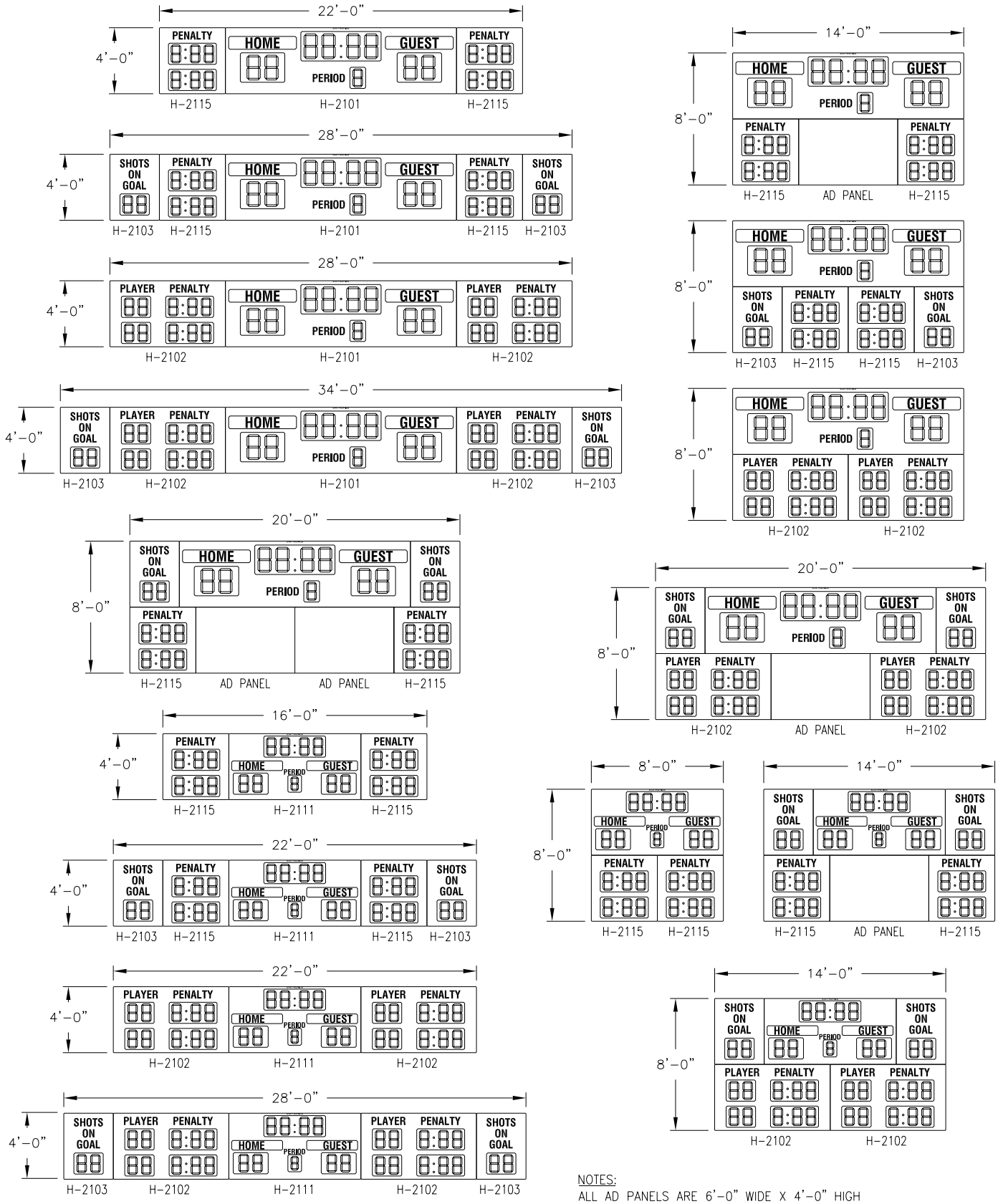
TITLE: ID OR AD PANEL MOUNTING TO SCOREBOARD

DES. BY: BPETERSON DRAWN BY: JJSYRSTAD DATE: 20 SEP 01

REVISION 02 APPR. BY:

SCALE: NONE

1237-R04A-156134



NOTES:
ALL AD PANELS ARE 6'-0" WIDE X 4'-0" HIGH
SEE DRAWING A-155390 FOR DIMENSIONS OF INDIVIDUAL SECTIONS.

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DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: TUFF SPORT SCOREBOARDS

TITLE: HOCKEY SCOREBOARD CONFIGURATIONS

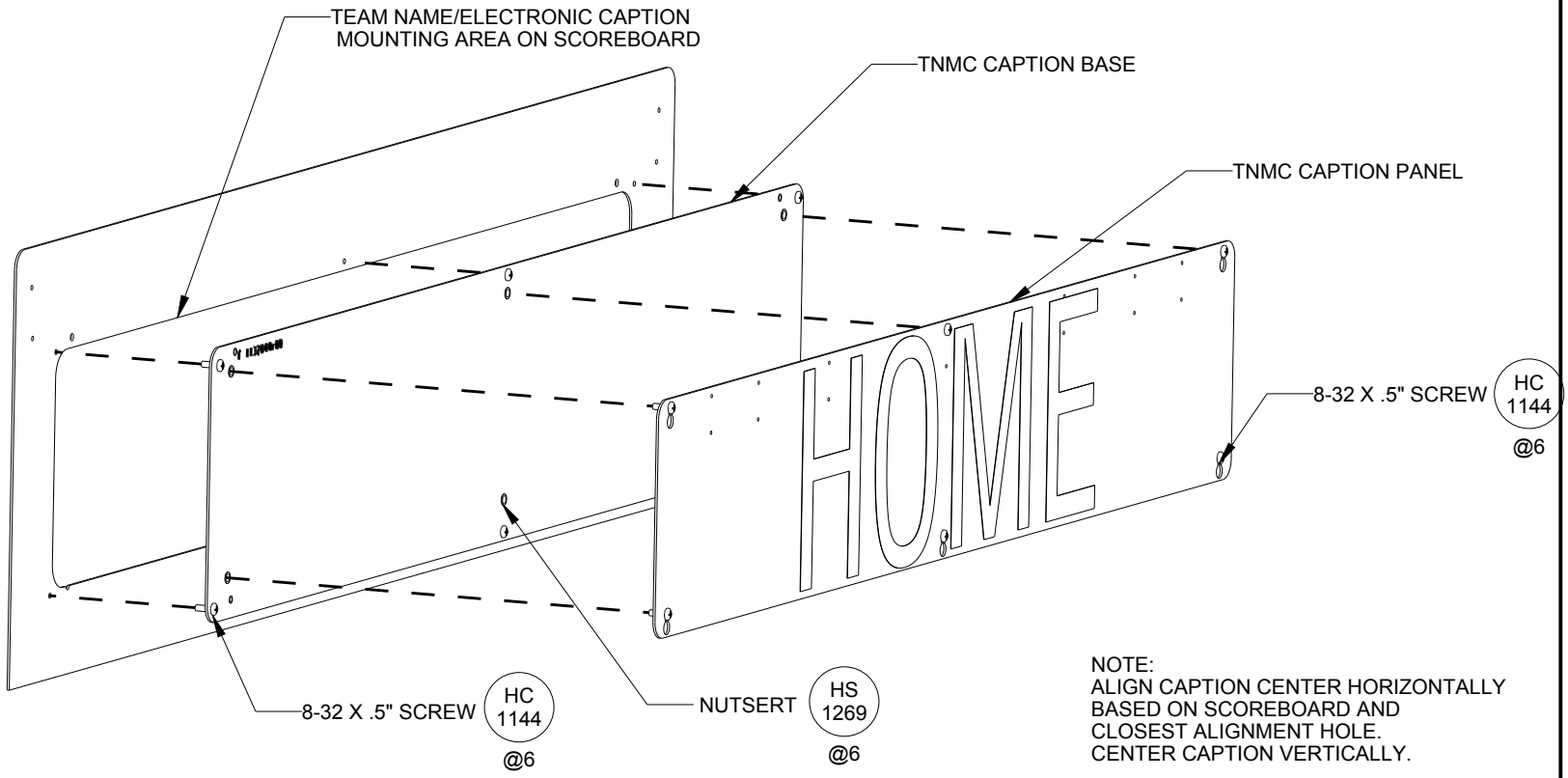
DES. BY: AVB DRAWN BY: A VANBEMMEL DATE: 17 JUN 02

REV.	DATE	DESCRIPTION	BY	APPR.
REVISION				

APPR. BY:

SCALE: 1=100

1237-R08A-169166



NOTE:
ALIGN CAPTION CENTER HORIZONTALLY
BASED ON SCOREBOARD AND
CLOSEST ALIGNMENT HOLE.
CENTER CAPTION VERTICALLY.

PROCEDURE:

1. PLACE HS-1269 NUTSERTS IN TNMC CAPTION BASE.

2. ATTACH TNMC CAPTION BASE TO SCOREBOARD
USING HC-1144 SCREWS.

3. ATTACH TNMC CAPTION PANEL TO TNMC CAPTION BASE
USING HC-1144 SCREWS PLACED IN ALL KEYHOLE LOCATIONS.

4. IN ORDER TO CHANGE CAPTION NAME, REMOVE TOP CENTER
SCREW, LOOSEN ALL OTHER SCREWS, SLIDE PANEL UP TO REMOVE
FROM SCREWS AND FLIP PANEL. PLACE PANEL BACK ON, SLIDE PANEL
DOWN. FASTEN TOP MIDDLE SCREW AND TIGHTEN ALL OTHER SCREWS.

REV	DATE:	BY:

DAKTRONICS, INC.
BROOKINGS, SD 57006
DO NOT SCALE DRAWING

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COPYRIGHT 2013 DAKTRONICS, INC.

PROJ: INDOOR SCOREBOARD
TITLE: CHANGEABLE TEAM NAME CAPTION INSTALLATION
DESIGN: MJOHNSO
DRAWN: MJOHNSO
DATE: 09-APR-13
SCALE: 1/5

SHEET:	REV	JOB NO:	FUNC-TYPE-SIZE
1 OF 1	00	P 1749	E - 10 - A

1132576

MOUNT THE ANGLE (WITH 1/2" NUT) UNDER THE OVERHANG AT THE TOP OF THE SCOREBOARD. USE ONE ANGLE AT EACH END OF THE SCOREBOARD. SECURE WITH TEK SCREWS INTO THE SIDE OF THE SCOREBOARD.

INSTALL THE EYEBOLTS IN HOLES IN THE ANGLES AND SECURE WITH LOCK NUTS.

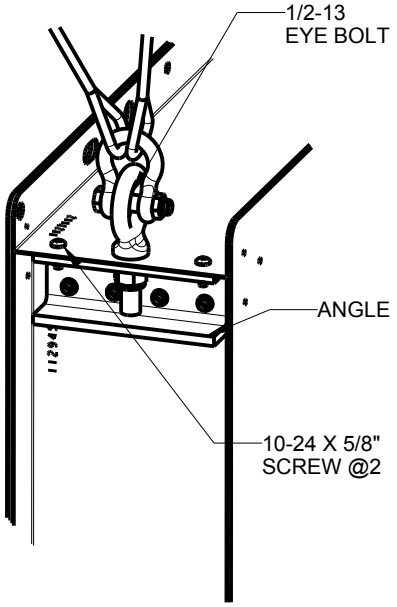
ATTACH SUSPENSION CABLES TO EACH EYEBOLT WITH A SHACKLE (CLEVIS) AND PIN.

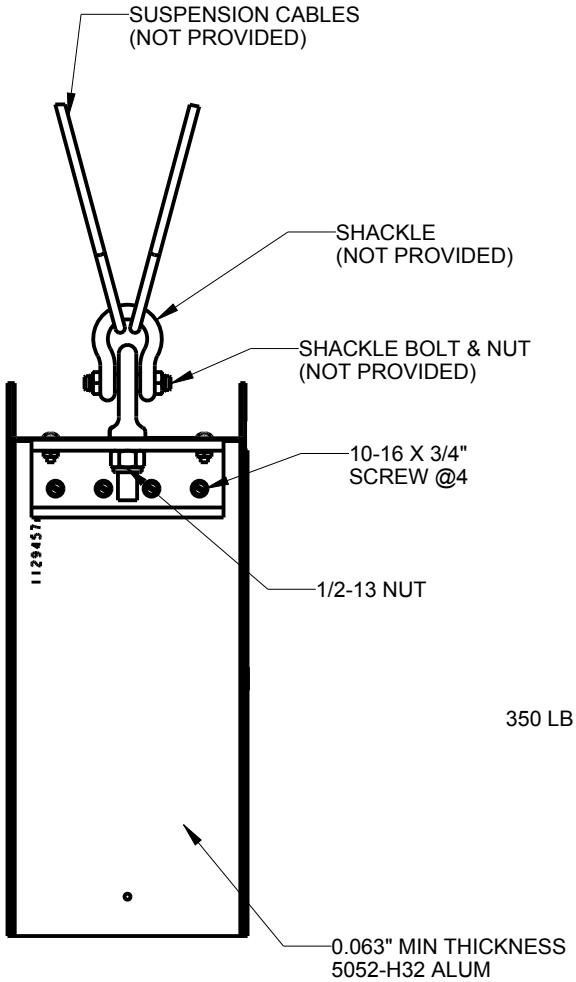
DAKTRONICS RECOMMENDS THAT TWO CABLES BE USED AT EACH END OF THE SCOREBOARD FOR REDUNDANCY. CABLES DIVERGE TO MINIMIZE SWINGING.

CABLES AND HARDWARE MUST BE SPECIFIED BY A LICENSED ENGINEER. THIS INSTALLATION METHOD MUST NOT BE USED TO SUPPORT SCOREBOARDS WITH MESSAGE CENTERS AND BACKLIT AD PANELS ATTACHED.

TOTAL WEIGHT OF SCOREBOARD AND ATTACHED ACCESSORIES MUST NOT EXCEED 350 LB.

SUSPENSION HARDWARE IS FOR THE TOP OF THE SCOREBOARD ONLY.
SCOREBOARD INSTALLATION WITH AD PANEL MUST NOT BE SUSPENDED FROM THE AD PANEL.
THE SCOREBOARD MUST BE AT THE TOP.





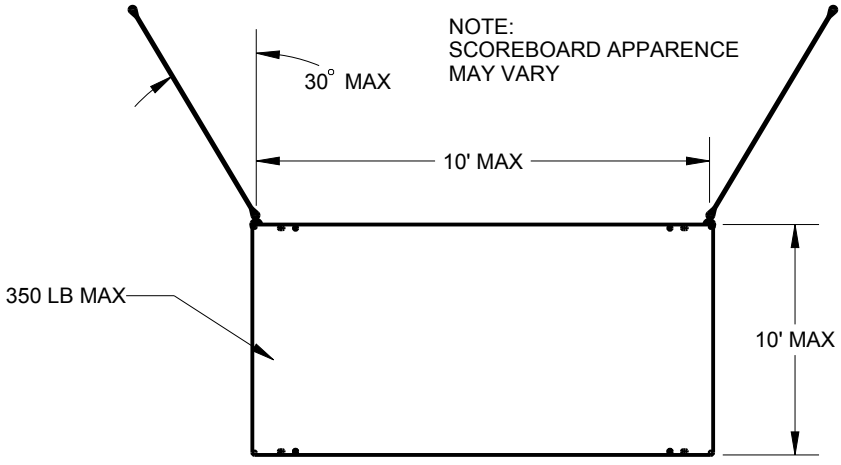
SIDE VIEW
TOP OF SCOREBOARD
TYP. BOTH ENDS

UPPER CORNER OF SCOREBOARD SHOWN

INSTALL ONE OF THESE ASSEMBLIES AT EACH END.

SUSPENSION LIFE EYE KIT IS DAKTRONICS PART NO. 0A-1749-4003

IMPORTANT:
DO NOT ATTACH SUSPENSION HARDWARE TO AD PANEL MOUNTED ON TOP OF SCOREBOARD. SCOREBOARD MUST BE AT THE TOP



REAR VIEW

REV	DATE:		BY:

DAKTRONICS, INC.
BROOKINGS, SD 57006
DO NOT SCALE DRAWING

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PROJ: INDOOR SCOREBOARDS				
TITLE: SUSPENSION LIFT EYE INSTALLATION				
DESIGN: DOPPELT	DRAWN: TFINNES			DATE: 04-JUN-13
SCALE: 1/5				
SHEET: 1 OF 1	REV 00	JOB NO: P 1749	FUNC-TYPE-SIZE E – 07 – A	1130959

Appendix C: Daktronics Warranty and Limitation of Liability

DAKTRONICS
WARRANTY AND LIMITATION OF LIABILITY

This Warranty and Limitation of Liability (the "Warranty") sets forth the warranty provided by Daktronics with respect to the Equipment. By accepting delivery of the Equipment, Purchaser agrees to be bound by and accept these terms and conditions. All defined terms within the Warranty shall have the same meaning and definition as provided elsewhere in the Agreement.

DAKTRONICS WILL ONLY BE OBLIGATED TO HONOR THE WARRANTY SET FORTH IN THESE TERMS AND CONDITIONS UPON RECEIPT OF FULL PAYMENT FOR THE EQUIPMENT.

1. **Warranty Coverage**

A. Daktronics warrants to the original end-user that the Equipment will be free from Defects (as defined below) in materials and workmanship for a period of one (1) year (the "Warranty Period"). The warranty period shall commence on the earlier of: (i) four weeks from the date that the equipment leaves Daktronics' facility; or (ii) Substantial Completion as defined herein. The warranty period shall expire on the first anniversary of the commencement date.

"Substantial Completion" means the operational availability of the Equipment to the Purchaser in accordance with the Equipment's specifications, without regard to punch-list items, or other non-substantial items which do not affect the operation of the Equipment.

B. Daktronics' obligation under this Warranty is limited to, at Daktronics' option, replacing or repairing, any Equipment or part thereof that is found by Daktronics not to conform to the Equipment's specifications. Unless otherwise directed by Daktronics, any defective part or component shall be returned to Daktronics for repair or replacement. Daktronics may, at its option, provide on-site warranty service. Daktronics shall have a reasonable period of time to make such replacements or repairs and all labor associated therewith shall be performed during regular working hours. Regular working hours are Monday through Friday between 8:00 a.m. and 5:00 p.m. at the location where labor is performed, excluding any holidays observed by either Purchaser or Daktronics.

C. Daktronics shall pay ground transportation charges for the return of any defective component of the Equipment. If returned Equipment is repaired or replaced under the terms of this warranty, Daktronics will prepay ground transportation charges back to Purchaser; otherwise, Purchaser shall pay transportation charges to return the Equipment back to the Purchaser. All returns must be pre-approved by Daktronics before shipment. Daktronics shall not be obligated to pay freight for any unapproved return. Purchaser shall pay any upgraded or expedited transportation charges.

D. Any replacement parts or Equipment will be new or serviceably used, comparable in function and performance to the original part or Equipment, and warranted for the remainder of the Warranty Period. Purchasing additional parts or Equipment from the Seller does not extend this Warranty Period.

E. Defects shall be defined as follows. With regard to the Equipment (excepting LEDs), a "Defect" shall refer to a material variance from the design specifications that prohibit the Equipment from operating for its intended use. With respect to LEDs, "Defects" are defined as LED pixels that cease to emit light. The limited warranty provided by Daktronics does not impose any duty or liability upon Daktronics for partial LED pixel degradation. Nor does the limited warranty provide for the replacement or installation of communication methods including but not limited to, wire, fiber optic cable, conduit, trenching, or for the purpose of overcoming local site interference radio equipment substitutions.

THIS LIMITED WARRANTY IS THE ONLY WARRANTY APPLICABLE TO THE EQUIPMENT AND REPLACES ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SPECIFICALLY, EXCEPT AS PROVIDED HEREIN, THE SELLER UNDERTAKES NO RESPONSIBILITY FOR THE QUALITY OF THE EQUIPMENT OR THAT THE EQUIPMENT WILL BE FIT FOR ANY PARTICULAR PURPOSE FOR WHICH PURCHASER MAY BE BUYING THE EQUIPMENT. ANY IMPLIED WARRANTY IS LIMITED IN DURATION TO THE WARRANTY PERIOD. NO ORAL OR WRITTEN INFORMATION, OR ADVICE GIVEN BY THE COMPANY, ITS AGENTS OR EMPLOYEES, SHALL CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS LIMITED WARRANTY.

THIS LIMITED WARRANTY IS NOT TRANSFERABLE.

2. Exclusion from Warranty Coverage

The limited warranty provided by Daktronics does not impose any duty or liability upon Daktronics for:

A Any damage occurring, at any time, during shipment of Equipment unless otherwise provided for in the Agreement. When returning Equipment to Daktronics for repair or replacement, Purchaser assumes all risk of loss or damage, and agrees to use any shipping containers that might be provided by Daktronics and to ship the Equipment in the manner prescribed by Daktronics;

B. Any damage caused by the unauthorized adjustment, repair or service of the Equipment by anyone other than personnel of Daktronics or its authorized repair agents;

C. Damage caused by the failure to provide a continuously suitable environment, including, but not limited to: (i) neglect or misuse, (ii) a failure or sudden surge of electrical power, (iii) improper air conditioning or humidity control, or (iv) any other cause other than ordinary use;

D. Damage caused by fire, flood, earthquake, water, wind, lightning or other natural disaster, strike, inability to obtain materials or utilities, war, terrorism, civil disturbance or any other cause beyond Daktronics' reasonable control;

E. Failure to adjust, repair or replace any item of Equipment if it would be impractical for Daktronics personnel to do so because of connection of the Equipment by mechanical or electrical means to another device not supplied by Daktronics, or the existence of general environmental conditions at the site that pose a danger to Daktronics personnel;

F. Any statements made about the product by salesmen, dealers, distributors or agents, unless such statements are in a written document signed by an officer of Daktronics. Such statements as are not included in a signed writing do not constitute warranties, shall not be relied upon by Purchaser and are not part of the contract of sale;

G. Any damage arising from the use of Daktronics products in any application other than the commercial and industrial applications for which they are intended, unless, upon request, such use is specifically approved in writing by Daktronics; or

H. Any performance of preventive maintenance.

3. Limitation of Liability

Daktronics shall be under no obligation to furnish continued service under this Warranty if alterations are made to the Equipment without the prior written approval of Daktronics.

It is specifically agreed that the price of the Equipment is based upon the following limitation of liability. In no event shall Daktronics (including its subsidiaries, affiliates, officers, directors, employees, or agents) be liable for any special, consequential, incidental or exemplary damages arising out of or in any way connected with the Equipment or otherwise, including but not limited to damages for lost profits, cost of substitute or replacement equipment, down time, lost data, injury to property or any damages or sums paid by Purchaser to third parties, even if Daktronics has been advised of the possibility of such damages. The foregoing limitation of liability shall apply whether any claim is based upon principles of contract, tort or statutory duty, principles of indemnity or contribution, or otherwise.

In no event shall Daktronics be liable to Purchaser or any other party for loss, damage, or injury of any kind or nature arising out of or in connection with this Warranty in excess of the purchase price of the Equipment actually delivered to and paid for by the Purchaser. The Purchaser's remedy in any dispute under this Warranty shall be ultimately limited to the Purchase Price of the Equipment to the extent the Purchase Price has been paid.

4. Assignment of Rights

The Warranty contained herein extends only to the original end-user (which may be the Purchaser) of the Equipment and no attempt to extend the Warranty to any subsequent user-transferee of the Equipment shall be valid or enforceable without the express written consent of Daktronics.

5. Dispute Resolution

Any dispute between the parties will be resolved exclusively and finally by arbitration administered by the American Arbitration Association ("AAA") and conducted under its rules, except as otherwise provided below. The arbitration will be conducted before a single arbitrator. The arbitration shall be held in Brookings, South Dakota. Any decision rendered in such arbitration proceedings will be final and binding on each of the parties, and judgment may be entered thereon in any court of competent jurisdiction. This arbitration agreement is made pursuant to a transaction involving interstate commerce, and shall be governed by the Federal Arbitration Act.

6. Governing Law

The rights and obligations of the parties under this warranty shall not be governed by the provisions of the United Nations Convention on Contracts for the International Sales of Goods of 1980. Both parties consent to the application of the laws of the State of South Dakota to govern, interpret, and enforce all of Purchaser and Daktronics rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Warranty, without regard to conflict of law principles.

7. Availability of Extended Service Agreement

For Purchaser's protection, in addition to that afforded by the warranties set forth herein, Purchaser may purchase extended warranty services to cover the Equipment. The Extended Service Agreement, available from Daktronics, provides for electronic parts repair and/or on-site labor for an extended period from the date of expiration of this warranty. Alternatively, an Extended Service Agreement may be purchased in conjunction with this warranty for extended additional services. For further information, contact Daktronics Customer Service at 1-800-DAKTRONics (1-800-325-8766).